

LINDA LINGLE
GOVERNOR



CHAD K. TANIGUCHI
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
HAWAII PUBLIC HOUSING AUTHORITY
1002 NORTH SCHOOL STREET
P.O. BOX 17907
Honolulu, Hawaii 96817

BARBARA E. ARASHIRO
EXECUTIVE ASSISTANT

ADDENDUM NO. 2

TO THE
PLANS AND SPECIFICATIONS
FOR
FURNISHING LABOR AND MATERIALS
REQUIRED FOR

**PHYSICAL IMPROVEMENTS
AT
KAHEKILI TERRACE**

HA 1-17

2015 HOLOWAI PLACE
WAILUKU, MAUI, HAWAII

TAX MAP KEY NO: (2) 3-4-33: 23

HPHA JOB NO. 07-064-117-S/F

IFB-CMS-2009-33

January 22, 2010

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned.

A. PRE-BID SIGN-IN SHEET AND MEETING MINUTES

1. See attached.

B. SPECIFICATIONS

1. INVITATION (NOTICE) TO BIDDERS

- a. Replace Form of Bid (Proposal) from January 2010 Bid Set with revised Form of Bid (Proposal). (See attached)

2. GENERAL CONDITIONS

- b. Replace General Conditions Section from January 2010 Bid Set with revised General Conditions Section. (See attached)

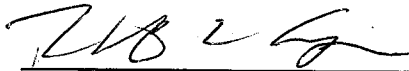
3. TECHNICAL SPECIFICATION

- a. Section 01571 Pest Control – Delete Section
- b. Section 03930 Concrete Rehabilitation – Sacrificial anodes are listed in Part 2 – Products, 2.02 Miscellaneous Materials, Item C. Sika Galvashield XP+. Conditions for where sacrificial anodes are deemed necessary are defined in Detail 1/S1.1 of 12-14-09 Bid Set.
- c. Section 03930 Concrete Rehabilitation – Question regarding "crack injection at CMU wall on both sides;" ABB requests that more information be given to properly answer the question.

C. DRAWINGS

No revisions.

Approved by:



Rick T. Sogawa
Acting Procurement Officer



PRE-BID MEETING ATTENDANCE SHEET

PHYSICAL IMPROVEMENTS AT KAHEKILI TERRACE, HPHA JOB NO. 07-064-117-S/F

January 19, 2010

10:30 a.m.

Name

Company

Phone/Fax No.

Email Address

[illegible]



Allana Buick & Bers, Inc.
707 Richards Street, Suite 635
Honolulu, HI 96813
t (808) 538-0115
f (808) 538-0117
www.abbae.com

ALLANA+BUICK+BERS

ARCHITECTS
ENGINEERS

MEETING MINUTES

Date:	January 19, 2010
Time:	10:30 AM
Meeting Location:	2015 Holowai Place Wailuku, Maui, Hawaii
Owner:	Hawaii Public Housing Authority
Project:	Physical Improvements at Kahekili Terrace HPHA Job no. 07-064-117-S/F IFB-CMS-2009-33
Subject:	Pre-Bid Meeting
Attendees:	Peter Schubert, ABB Bruce Bowman, Bowman Termite & Pest Management Randy Morgan, Domain D Leis. Shawn Kurihara, Society Contracting Rupert Suda, Site Engineers, Inc. Clarence Ferreira, March Painting Rory Camara, HPHA Milton Kekiwi, HPHA Dan Bowens, Artistic Builders Tom Boomer, Structural Concrete Bonding & Restoration James Olson, MRC, Inc. Patricia Amor, FNH Construction Leslie Hien, HPHA Becky Choi, HPHA

Item	Description
1.	Meeting was called to order at 10:00am.
2.	Attendee list is attached.
3.	Marcel Audant – HPHA a. Stressed the importance of inspection requirements for this project. Since the funding for this project is part of the American Recovery and Reinvestment Act (AHRA), there are increased reporting and audit requirements for the project. These requirements (labor totals, jobs created/saved, etc...) are outlined in the specification. Contractors are to account for the increased administrative requirements in their bids.



Allana Buick & Bers, Inc.
707 Richards Street, Suite 635
Honolulu, HI 96813
t (808) 538-0115
f (808) 538-0117
www.abbae.com

ALLANA+BUICK+BERS

ARCHITECTS
ENGINEERS

	<ul style="list-style-type: none">b. The names listed for the bidding entity must match between required bid submittal paperwork (Bid Bond, Bid Summary, Tax Certificates...)c. Maui General Excise Tax (GET) is 4.166%, not 4.712%.d. There is a very short time frame for document review and bids. Project funding is contingent on meeting this time frame.e. Project start date is tentatively in April 2010.f. Wage scale is dictated by the Davis-Bacon Act (<i>in response to a contractor inquiry</i>)
4.	<p>Becky Choi – HPHA</p> <ul style="list-style-type: none">a. Due to the short history of administration of the AHRA, reporting requirements are somewhat fluid and subject to change. The process is evolving.b. This project will very likely be the subject of an Inspector General audit.c. 1.ARRA FUNDS. This project will be federally funded by the American Recovery and Reinvestment Act of 2009 (ARRA), commonly known as the stimulus funds. As such, it is subject to mandatory federal reporting requirements such as, "How many jobs were created?, How many jobs were saved?" etc. as a result of ARRA. This reporting is required of the General Contractor of their firm and all of its subcontractors in a timely fashion on a monthly basis as described in the Special Conditions. This project will be subject to an audit by the Inspector General. Davis Bacon wages and Certified Payrolls, Section 3 requirements, etc. will be reviewed and verified by HPHA and the IG. ARRA is a new thing, rules are being made and changed as we go. Please consider that and the heavy record keeping and reporting requirements when calculating your bids. 60% of all ARRA funds must be expended by March 17, 2011 and 100% by March 17, 2012. Internally, HPHA must execute the contract by March 1st or stands a chance to lose the funding. There is NO ROOM FOR ERRORS in the bids as any error will cause a delay that will require the Attorney General to give a legal opinion, possibly missing the ARRA funding deadline.d. When filling out forms, make sure that the company name is consistent with how it is registered to do business. If your company's legal name has a dba, please include it on all forms. If "Incorporated" is part of the name, do NOT write "Inc." but rather spell it out or vice versa as it is registered. Make sure to double check your math. GET cannot exceed 4.166% (do NOT round up, it will <u>not</u> be considered a math error but rather a non-responsive bid). Tax shall be calculated on the TOTAL bid amount. (Subcontractors' tax shall be adjusted for and incorporated in the Contractor's bid.) Do not leave any lines blank. Do not add any conditions, additional materials, etc., this is not a request for proposal but rather an invitation to bid. Be sure to list all subcontractors (any work done by anyone other than your employees).



Allana Buick & Bers, Inc.
707 Richards Street, Suite 635
Honolulu, HI 96813
t (808) 538-0115
f (808) 538-0117
www.abbae.com

ALLANA+BUICK+BERS

ARCHITECTS
ENGINEERS

	e. If awarded the contract, do NOT proceed on any work unless the authorization to do so is in writing from the procurement office (CPO) or you may jeopardize being paid for that work. This includes ALL field orders by anyone, architect, HPHA engineer or inspector, etc. It <i>must</i> be approved in <u>writing</u> from CPO.
5.	<p>Pete Schubert – ABBAE</p> <p>a. This bid package is large and there are 40+ plan pages. Please conduct a thorough review prior to the close of the questioning period.</p> <p>b. Per HPHA, the question period is being adjusted to coincide with the Intent to Bid date – January 25, 2010.</p> <p>c. There will be at least one (1) more addendum to clarify dates, concrete spall unit pricing, and any other questions raised during the review period.</p>
6.	<p>Contractor Questions – Questions (Q) Answers (A)</p> <p>Q. Are the subcontractors to add GET to their bids to the General Contractor?</p> <p>A. The bid summary sheet has two lines one for Tax and one for Bid sum. The total bid is taxed. How the general/sub-contractors work out tax filing on their individual totals is up to the general/sub-contractors involved and not to be recorded on the bid form.</p> <p>Q. Concrete Spalling allowance is currently unit priced in linear feet. Is this how the addendum will show it?</p> <p>A. No, concrete spalling will be broken out into horizontal, vertical, and overhead and be unit priced in cubic inches. Crack injection will be unit priced by in linear feet. Further clarification will be provided by addendum.</p> <p>Q. Specification calls for the installation of sacrificial anodes in conjunction with concrete spall repair. How is the requirement for the installation of these anodes determined and how are they to be priced?</p>
	<p>A. Installation requirement will presumably be a field determination based on the extent of the concrete spall. Pricing shall be a unit price of each. Further clarification will be provided by addendum.</p> <p>Q. Are the buildings to be occupied during construction?</p> <p>A. HPHA will relocate tenants as required to provide two empty buildings at a time for construction.</p> <p>Q. Is crack injection at the CMU walls to be two sided?</p> <p>A. Further clarification will be provided by addendum.</p>



Allana Buick & Bers, Inc.
707 Richards Street, Suite 635
Honolulu, HI 96813
t (808) 538-0115
f (808) 538-0117
www.abbae.com

ALLANA+BUICK+BERS

ARCHITECTS
ENGINEERS

7.	Guided site tour was initiated. Tour was terminated after viewing only ~15% of the property as there were no further contractor questions. Parties were advised to contact HPHA to schedule any additional site visit requirements.
8.	Meeting concluded at 11:15 AM



IFB CMS-2009-33

FORM OF BID (PROPOSAL)



FOR

FURNISHING LABOR AND MATERIALS REQUIRED TO

Physical Improvements to Kahekili Terrace, HA 1-17
2015 Holowai Place
Wailuku, Maui, Hawaii 96793

TAX MAP KEY: (2) 3-4-33:23

JOB NO. 07-064-117-S/F

To: Procurement Officer
Hawaii Public Housing Authority (HPHA)
1002 North School Street
Honolulu, Hawaii 96817

1. The undersigned Bidder, having visited the site of work and being familiar with the conditions under which the work is to be performed and having read the specifications and other contract documents relating to **Job No. 07-064-117-S/F, PHYSICAL IMPROVEMENTS TO KAHEKILI TERRACE, HA 1-17, MAUI, HAWAII**, hereby proposes to furnish all labor, materials, equipment, tools, transportation, permits, incidentals and supplies required to complete the project in full accordance with the contract documents for the following price(s).

BID ITEM NO. 1 – BASE BID: Physical Improvements to Kahekili Terrace, Sites 1 & 2

The scope of work includes but is not limited to;

- re-roof and replacement of solar water heating systems
- replacement of gas meters
- replacement of chain link fencing at the basket ball court, removal of BBQ pit, removal of drinking fountain and relocation of public telephone
- installation of new exterior building lighting and security lighting.
- removal of existing mail boxes and installation of new gang mailboxes. (mail boxes to be provided by the United State Post Office, delivery and installation to be provided by contractor)
- painting
- replacement of privacy fencing at Site #2.
- installation of new roof access ladders.
- work involving installation of new retaining walls, new landscaping, pruning and tree removal.
- Demolition of existing sheds and installation of new storage addition.

○ Installation of new tank enclosures.
and associated or miscellaneous items as shown in contract documents for a total lump sum bid of:

_____ DOLLARS (\$ _____)

STATE GENERAL EXCISE TAX (_____ %): _____

_____ DOLLARS (\$ _____)

TOTAL BID ITEM NO 1: (includes Bid Item #1 and State GET)

_____ DOLLARS (\$ _____)

BID ITEM NO. 2 – CONCRETE REPAIR: The scope of work covered under Bid Item No. 2 in general shall consist of all concrete repair work of spalls and cracks not covered by the Bid Item No. 1 - Base Bid and is described as but not limited to the following:

- spalls and cracks indicated on the floor plans
- spall at concrete walls
- spall at topping of Lanai corridor
- spalls at stair treads/risers and landings
- cracks at precast concrete spandrels
- spalls at precast concrete spandrels and metal plate brackets
- cracks at grout
- spalls at guardrails in Stairs

The Contractor shall include in Bid Item No 2 a declaration of the UNIT PRICE for each respective work item and the TOTAL COST for the quantities indicated. Note that the UNIT PRICE shall include the related overhead and profit.

In the event that during construction the declared estimated quantities are exceeded beyond fifteen percent (15%), the Contractor shall submit a proposal request for the repairs at the unit prices indicated below. No work for additional quantities beyond fifteen percent (15%) shall proceed without prior approval from HPHA. Should the actual quantities be below the declared estimated quantities beyond fifteen percent (15%), then a change order for the deriving credit for the lesser quantity shall be provided.

<u>DESCRIPTION</u>	<u>ESTIMATED QUANTITY</u>	<u>UNIT PRICE</u>	<u>TOTAL COST</u>
Section <u>03930</u> Spall Repair	<u>513,024</u> /CI	\$ _____/CI	\$ _____
Section <u>03930</u> Crack Repair	<u>22,320</u> /LF	\$ _____/LF	\$ _____

STATE GENERAL EXCISE TAX (_____ %): _____

_____ DOLLARS (\$ _____)



TOTAL BID ITEM NO 2: includes Bid Item #2 and State GET) _____

_____ DOLLARS (\$ _____)

GRAND TOTAL BASE BID (Item #1 Base Bid and Bid Item #2 (which includes the Hawaii General Excise Tax of _____ %): _____

_____ DOLLARS (\$ _____).

The contract time shall be 225 calendar days.

2. In submitting this bid, it is understood that the award of Contract will be made to the lowest responsible Bidder for the Grand Total Base Bid which includes Tax.
3. In submitting this bid, it is understood that the Bidder has examined and is familiar with the existing site conditions and the scope of work as provided by the drawings and specifications and accepts all conditions of the work.
4. The Bidder proposes to complete the work within the time specified in the special conditions from date of notice to proceed after acceptance of bid.
5. The HPHA reserves the right to accept or reject any and all bids and to determine the lowest responsive and responsible bidder.
6. The Bidder understands that this bid may not be withdrawn within 120 days after the opening of bids.
7. The Bidder understands that no supplemental literature, brochures or other unsolicited information should be included in the bid packet. Any such literature, brochures or other unsolicited information shall not be considered. Any bid offering any other sets of terms and conditions contradictory to those included in this IFB may be rejected without further notice.
8. It is understood and agreed that if the Bidder fails to start work at the job site within 30 days as scheduled on the approved working schedule, the failure will be sufficient cause to terminate the contract as specified in the HPHA General Conditions (Item 7.27 TERMINATION OF CONTRACT FOR CAUSE). Work at the job site is defined as any Contractor operations as detailed in the working schedule approved by the HPHA.
9. Failure to complete the bid proposal in its entirety may cause a bid to be considered non-responsive.
10. Bid Security (5%) in the Sum of: _____

_____ DOLLARS (\$ _____)

in the form of _____ is submitted herewith in accordance with the HPHA General Conditions.



11. Upon acceptance of this bid, the undersigned hereby agrees to enter into, execute and deliver the Contract set forth in the specifications and furnish the required performance and payment bond within 15 days after the Contract is presented to him/her for signature.
12. It is understood and agreed that if any portion of the work is funded by the Federal Capital Fund Stimulus Grant, the provisions of the American Recovery and Reinvestment Act (ARRA) shall apply to all work and any subsequent change orders/modifications.
13. AMERICAN RECOVERY AND REINVESTMENT ACT 2009.

If any portion of the work is funded by the Federal Capital Fund Stimulus Grant, the resulting Contract for this IFB shall be governed by the provisions of the American Recovery and Reinvestment Act of 2009, Public Law 111-5 ("ARRA" or "Recovery Act") and Federal Regulations and other guidance from the federal government implementing the ARRA.

The CONTRACTOR shall comply with all applicable ARRA requirements as may be amended from time to time, including without limitation, maintaining records that identify adequately the source and application of ARRA funds to maximize the transparency and accountability of ARRA funds. The CONTRACTOR shall also agree to provide all information and documentation required by the federal government and the STATE in order to comply with the ARRA requirements. In the event of a conflict between the terms of this Contract and the ARRA requirements, the provisions of the ARRA requirements shall be controlling.

14. Recovery Act-Duns and CRR Reporting and Registration Requirements. Pursuant to section 1512 of the Recovery Act, the HPHA shall maintain a valid Dun and Bradstreet Data Universal Numbering System (DUNS) Number and shall maintain a current registration with the Central Contractor Registration (CCR) database. The DUNS number (www.dnb.com) is one of the requirements for registration in the CRR (www.ccr.gov).
15. Recovery Act-Reporting Requirements. Pursuant to section 1512 of the ARRA, state agencies receiving ARRA funds must submit a report to the federal government no later than ten (10) calendar days after the end of each calendar quarter. Therefore, in addition to the required monthly progress reports, if ARRA applies, the CONTRACTOR shall agree to:
 - a. Submit quarterly activity and financial reports not later than five (5) days after the end of the three (3) month period as stated below, as applicable.
 - b. Fulfill all reporting requirements prescribed by the HPHA within the deadlines set by HUD for the quarterly reports as listed below, as applicable.



	Type of Report	Time of Performance Report	Due to the STATE
Reporting Year 1			
	1 st Quarterly Report	October 1, 2009 through December 31, 2009	January 5, 2010
	2 nd Quarterly Report	January 1, 2010 through March 31, 2010	April 5, 2010
	3 rd Quarterly Report	April 1, 2010 through June 30, 2010	July 5, 2010
	4 th Quarterly Report	July 1, 2010 through September 30, 2010	October 5, 2010
Reporting Year 2			
	1 st Quarterly Report	October 1, 2010 through December 31, 2010	January 5, 2011
	2 nd Quarterly Report	January 1, 2011 through March 31, 2011	April 5, 2011
	3 rd Quarterly Report	April 1, 2011 through June 30, 2011	July 5, 2011
	4 th Quarterly Report	July 1, 2011 through September 30, 2011	October 5, 2011
Reporting Year 3			
	1 st Quarterly Report	October 1, 2011 through December 31, 2011	January 5, 2012
	2 nd Quarterly Report	January 1, 2012 through March 18, 2012	March 23, 2012

- c. Submit other reports as instructed by the STATE.
- d. All reports shall include without limitation:
- (1) The total amount of ARRA funds received by the Contractor during the reporting period.
 - (2) The amount of ARRA funds that were expended or obligated during the reporting period.
 - (3) A detailed list of all projects or activities for which ARRA funds were expended or obligated, including:
 - (a) The name of the project or activity.
 - (b) A description of the project or activity.
 - (c) An evaluation of the completion status of the project or activity.
 - (d) An estimate of the number of jobs created and the number of jobs retained by the project or activity.
 - (4) A summary of income and expenditures to date.



- (5) A summary of payroll reports that shall include in detail the payment of salary or wages for each employee, and pay roll tax and fringe benefits costs; and
 - (6) A summary of hours worked and number of employees employed by the CONTRACTOR during the reporting period.
 - (7) Detailed information on any subcontract awarded by the CONTRACTOR in compliance with the Federal Funding Accountability and Transparency Act of 2006 (Public Law 109-282), including:
 - (a) A list of all subcontractors working on the project during the reporting period.
 - (b) Dollar amount of each subcontractor contract.
 - (c) Number of employees employed by each subcontractor during the reporting period.
 - (8) Other data as may be required by the HPHA and HUD.
 - e. Submit backup documentation for expenditures of ARRA funds, including timecards and invoices, as required by the HPHA and HUD.
 - f. Reports submitted must not contain protected personal identifiable information, limited rights data (proprietary data), classified information, or other information not subject to release.
16. Recovery Act-Delinquent Reports. The CONTRACTOR shall comply with all reporting requirements under the Recovery Act. Failure to comply with the reporting requirements is considered a material noncompliance with the terms of this Contract. The CONTRACTOR's failure to comply with the reporting requirements may, in addition to other penalties, subject the CONTRACTOR to the following:
- a. After failure to report complete data by the due date stated above for two (2) consecutive reporting periods, the CONTRACTOR may be precluded from drawing down funds until such time as the CONTRACTOR becomes current in its reporting obligations.
 - b. After failure to report complete data by the due date stated above for three (3) consecutive reporting periods, the HPHA may terminate the Contract for cause.
17. Recovery Act-Segregation of Funds. In multiple-funded projects, the ARRA funds shall not be commingled with other funds used to complete a project(s). The CONTRACTOR shall segregate the obligations and expenditures related to the ARRA funds. The Contractor shall further track, account for, and report on all ARRA funds (including specific outcomes and benefits attributable to ARRA funds) separately from all other funds. Accordingly, the CONTRACTOR's accounting system must ensure that the ARRA funds are not commingled with funds from any other source. Personnel, employees, and subcontractors whose activities are to be charged to this Contract shall maintain timesheets to document hours worked for activities related to this Contract.



18. Recovery Act-Wage Requirements. The CONTRACTOR shall comply with section 1606 of the Recovery Act that requires the payment of Davis-Bacon Act (40 U.S.C. 31) wage rates to “laborers and mechanics employed by contractors or subcontractors on projects funded directly by or assisted in whole or in part by and through the Federal Government”. Pursuant to the Recovery Act, laborers and mechanics shall be paid wages at rates not less than those prevailing on projects of a character similar in the locality as determined by the Secretary of Labor in accordance with subchapter IV of chapter 31 title 40, United States Code. Wage determinations can be found at www.wdol.gov.

Pursuant to Reorganization Plan No. 14 and the Copeland Act, 40 U.S.C. 3145, the Department of Labor has issued regulations at 29 CFR parts 1, 3, and 5 to implement the Davis-Bacon and related Acts. The standard Davis-Bacon contract clauses found in 29 CFR 5.5(a) are incorporated into this Contract, which is in excess of \$2,000 for construction, alteration or repair, including painting and decorating.

19. Recovery Act-Buy American Requirement. In accordance with section 1605 of the ARRA, the Contractor agrees that it shall not use ARRA funds for a project for the construction, alteration, maintenance, or repair of a public building or public work, unless all of the iron, steel, and manufactured goods used in the project are produced in the United States in a manner consistent with United States obligations under international agreements. The Contractor understands that this requirement may only be waived by the applicable federal agency in limited situations as set out in section 1605 of the Recovery Act. Further information on American made products can be found at www.americansworking.com.
20. Recovery Act-NEPA and Related Laws. The CONTRACTOR shall comply with the National Environmental Policy Act (NEPA, 42 U.S.C. section 4321 et seq.), other related Federal laws (including the National Historic Preservation Act), and all applicable State and local environmental laws and regulations.
21. Recovery Act-Whistleblower Protection: The CONTRACTOR shall comply with section 1553 of the ARRA that prohibits discharging, demoting or otherwise discriminating against an employee who discloses information that the employee reasonably believes to be evidence of: a) gross management of ARRA funds; b) gross waste of ARRA funds; c) substantial and specific danger to public health or safety related to the use of ARRA funds; d) abuse of authority related to the use of ARRA funds; or e) violations of law related to contracts funded in whole or in part by the Recovery Act.
22. Recovery Act-Misuse of ARRA Funds. The CONTRACTOR understands and shall agree that misuse of ARRA funds may result in a range of penalties, including suspension of current and future funds, suspension or debarment from federal grants, recoupment of monies provided under this Contract, and civil and/or criminal penalties. This provision is in addition to all other remedies available to the STATE under all applicable federal and state laws and county ordinances.
23. Recovery Act-Requirements and Conditions. The CONTRACTOR shall comply with any and all applicable ARRA requirements and conditions, any amendments, modifications and clarifications of the Recovery Act as well as any additional requirements imposed by law.



24. Recovery Act-Requirements Applicable to Subcontractor. The Contractor shall include these special conditions, requirements and terms in any of its subcontracts for projects funded in whole or in part with ARRA funds available under the American Recovery and Reinvestment Act of 2009. The Contractor shall further agree to be responsible for oversight of its subcontractors' spending and for monitoring the specific outcomes and benefits attributable to the use of the ARRA funds by its subcontractors.
25. BIDDER SHALL BE RESPONSIBLE TO CONFIRM THE EXISTENCE OF ANY ADDENDUM TO THIS BID SOLICITATION BY TELEPHONING (808) 832-5987.
26. Receipt of the following addenda (if any) issued by the HPHA is acknowledged by the date(s) of receipt indicated below:

Addendum No. 1 _____

Addendum No. 3 _____

Addendum No. 2 _____

Addendum No. 4 _____

It is understood that failure to receive any such addendum shall not relieve the Bidder from any obligation of this Proposal.

OFFICIAL ADDRESS

FIRM NAME: _____

By: _____

Title: _____

Date: _____



HPHA GENERAL CONDITIONS

GENERAL CONDITIONS

TABLE OF CONTENTS

ARTICLE/SECTION	PAGE
<hr/>	
ARTICLE 1	DEFINITIONS AND ABBREVIATIONS
<hr/>	
1.1	DEFINITIONS 6
1.2	ABBREVIATIONS 11
<hr/>	
ARTICLE 2	BID REQUIREMENTS AND CONDITIONS
<hr/>	
2.1	QUALIFICATION OF BIDDERS 12
2.2	INTERPRETATION OF QUANTITIES IN BID SCHEDULE 14
2.3	CONTENTS OF BID FORMS 15
2.4	BIDDER'S RESPONSIBILITY FOR EXAMINATION OF CONTRACT DOCUMENTS, SITE OF WORK, ETC. 15
2.5	UTILITIES AND SERVICES 16
2.6	ADDENDA AND BID CLARIFICATIONS 16
2.7	SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING 17
2.8	PREPARATION OF BID 18
2.9	BID SECURITY 18
2.10	DELIVERY OF BID 19
2.11	WITHDRAWAL OR REVISION OF BID 20
2.12	PUBLIC OPENING OF BID 20
2.13	DISQUALIFICATION OF BIDDERS 20
2.14	PROTESTS 21
<hr/>	
ARTICLE 3	AWARD AND EXECUTION OF CONTRACT
<hr/>	
3.1	CONSIDERATION OF BIDS; CANCELLATION 22
3.2	NON-RESPONSIVE BIDS 22
3.3	CORRECTION OF BIDS AND WITHDRAWAL OF BIDS (\$3-122-31 HAR) 23
3.4	AWARD OF CONTRACT 23
3.5	CANCELLATION OF AWARD 24
3.6	RETURN OF BID SECURITY 24
3.7	REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS 24
3.8	EXECUTION OF THE CONTRACT 24
3.9	FAILURE TO EXECUTE THE CONTRACT 25
3.10	NOTICE TO PROCEED 25
3.11	RELATIONSHIP OF PARTIES 26
3.12	PERSONNEL REQUIREMENTS 27
3.13	NONDISCRIMINATION 27
3.14	CONFLICTS OF INTEREST 27

ARTICLE 4 SCOPE OF WORK

4.1	INTENT OF CONTRACT, DUTY OF CONTRACTOR.....	28
4.2	CHANGES	28
4.3	DUTY OF CONTRACTOR TO PROVIDE <u>BID</u> FOR CHANGES.....	29
4.4	PRICE ADJUSTMENT (§3-125-13 HAR).....	30
4.5	ALLOWANCES FOR OVERHEAD AND PROFIT (§3-125-13 HAR).....	30
4.6	PAYMENT FOR DELETED MATERIAL.....	31
4.7	VARIATIONS IN ESTIMATED QUANTITIES (§3-125-10 HAR).....	31
4.8	VARIATIONS IN BOTTOM ELEVATIONS.....	31
4.9	DIFFERING SITE CONDITIONS (§3-125-11 HAR).....	32
4.10	COSTS AND EXPENSES	32

ARTICLE 5 CONTROL OF WORK

5.1	AUTHORITY OF THE EXECUTIVE DIRECTOR.....	33
5.2	AUTHORITY OF THE PROJECT ENGINEER.....	33
5.3	AUTHORITY OF THE INSPECTOR.....	33
5.4	AUTHORITY OF CONSULTANT(S).....	33
5.5	SHOP DRAWINGS AND OTHER SUBMITTALS	33
5.6	COORDINATION OF CONTRACT DOCUMENTS	36
5.7	INTERPRETATION OF DRAWINGS AND SPECIFICATIONS.....	38
5.8	EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE ..	38
5.9	COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT	38
5.10	INSPECTION	40
5.11	REMOVAL OF DEFECTIVE, NON-CONFORMING AND UNAUTHORIZED WORK.....	41
5.12	VALUE ENGINEERING INCENTIVE	42
5.13	SUBCONTRACTS	43

ARTICLE 6 CONTROL OF MATERIALS AND EQUIPMENT

6.1	MATERIALS AND EQUIPMENT	45
6.2	SOURCE OF SUPPLY AND QUALITY OF MATERIALS	45
6.3	SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING.....	45
6.4	ASBESTOS CONTAINING MATERIALS	46
6.5	TEST SAMPLES.....	46
6.6	MATERIAL SAMPLES.....	46
6.7	NON-CONFORMING MATERIALS	47
6.8	HANDLING MATERIALS.....	47
6.9	STORAGE OF MATERIALS	47
6.10	PROPERTY RIGHTS IN MATERIALS	47
6.11	ANTITRUST CLAIMS	47

ARTICLE 7 PROSECUTION AND PROGRESS

7.1	PROSECUTION OF THE WORK.....	49
7.2	COMMENCEMENT REQUIREMENTS	49
7.3	INSURANCE REQUIREMENTS.....	50
7.4	PERMITS AND LICENSES	52
7.5	NORMAL WORKING HOURS.....	52
7.6	HOURS OF LABOR (§104-2 HRS)	52
7.7	PREVAILING WAGES (§104-2 HRS & FEDERAL DAVIS-BACON).....	53
7.8	FAILURE TO PAY REQUIRED WAGES (\$104-4 HRS OR FEDERAL DAVIS-BACON)	54
7.9	PAYROLLS AND PAYROLL RECORDS (§104-3 HRS)	54
7.10	OVERTIME AND NIGHT WORK.....	54
7.11	OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE	55
7.12	LIMITATIONS OF OPERATIONS	55
7.13	ASSIGNMENT OR CHANGE OF NAME (§3-125-14 HAR)	56
7.14	LAWS TO BE OBSERVED.....	57
7.15	PATENTED DEVICES, MATERIALS AND PROCESSES.....	57
7.16	SANITARY, HEALTH AND SAFETY PROVISIONS	58
7.17	PROTECTION OF PERSONS AND PROPERTY.....	58
7.18	ARCHAEOLOGICAL SITES	59
7.19	RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY	60
7.20	CHARACTER OF WORKERS OR EQUIPMENT	60
7.21	CONTRACT TIME	61
7.22	CONSTRUCTION SCHEDULE	64
7.23	STATEMENT OF WORKING DAYS	64
7.24	SUSPENSION OF WORK (§3-125-7 HAR)	65
7.25	DISPUTES AND CLAIMS (§3-126-31 HAR)	66
7.26	FAILURE TO COMPLETE THE WORK ON TIME.....	68
7.27	TERMINATION OF CONTRACT FOR CAUSE (§3-125-18 HAR).....	69
7.28	TERMINATION FOR CONVENIENCE (§3-125-22 HAR)	70
7.29	CORRECTING DEFECTS	71
7.30	FINAL CLEANING	71
7.31	SUBSTANTIAL COMPLETION AND FINAL INSPECTION.....	71
7.32	PROJECT ACCEPTANCE DATE	73
7.33	FINAL SETTLEMENT OF CONTRACT	74
7.34	CONTRACTOR'S RESPONSIBILITY FOR WORK; RISK OF LOSS.....	75
7.35	GUARANTEE OF WORK	75
7.36	WORK OF AND CHARGES BY UTILITIES	76
7.37	RIGHT TO AUDIT RECORDS.....	76
7.38	RECORDS MAINTENANCE, RETENTION AND ACCESS.....	76
7.39	COST OR PRICING DATA	77
7.40	CONFIDENTIALITY OF MATERIAL.....	77
7.41	PUBLICITY.....	77

ARTICLE 7 PROSECUTION AND PROGRESS

7.42	OWNERSHIP RIGHTS AND COPYRIGHT	78
7.43	GOVERNING LAW	78
7.44	SEVERABILITY	78
7.45	WAIVER	78

ARTICLE 8 MEASUREMENT AND PAYMENT

8.1	MEASUREMENT OF QUANTITIES	79
8.2	NO WAIVER OF LEGAL RIGHTS	79
8.3	PAYMENT FOR ADDITIONAL WORK	79
8.4	PROGRESS AND/OR PARTIAL PAYMENTS	83
8.5	PROMPT PAYMENT (§3-125-23 HAR)	84
8.6	RETAINAGE	85
8.7	WARRANTY OF CLEAR TITLE	86
8.8	FINAL PAYMENT	86
8.9	STATE'S RIGHT TO OFFSET	86

ARTICLE 1 – DEFINITIONS AND ABBREVIATIONS

1.1 DEFINITIONS: Whenever the following terms or pronouns are used in these Bidding and Execution of Contract Requirements, and General Conditions, or in any contract documents or instruments where these Bidding and Execution of Contract Requirements, and General Conditions govern, the intent and meaning shall be interpreted as follows:

(1) ADDENDUM (plural - Addenda). A written or graphic document, including Drawings and Specifications, issued by the Executive Director during the bidding period which modifies or interprets the bidding documents, by additions, deletions, clarifications or corrections, which shall be considered and made a part of the bid proposal and the contract.

(2) ADDITION (to the contract sum). Amount added to the contract sum by Change Order.

(3) ADMINISTRATIVE RULES. Hawaii Administrative Rules for Chapter 103-D of the Hawaii Revised Statutes.

(4) ADVERTISEMENT. A public announcement inviting bids for work to be performed or materials to be furnished.

(5) BAD WEATHER DAY. When weather or other conditions prevent a minimum of four hours of work with the Contractor's normal work force on controlling items of work at the site. (See excess bad weather day.)

(6) BENEFICIAL OCCUPANCY. The point of project completion when the HPHA can use the constructed facility in whole or in part for its intended purpose even though substantial completion may not be achieved.

(7) BID. The executed document submitted by a Bidder in the prescribed manner, in response to a request for BID or invitation to Bid, to perform at the prices quoted, for the work specified under the contract, within the time prescribed for performance.

(8) BID FORM. The form prepared by the HPHA on which the written offer or formal bid for the work to be done is submitted by the Bidder. By submitting a bid on the proposal form, a Bidder adopts the language therein as its own.

(9) BID SECURITY. The security furnished by the Bidder from which the HPHA may recover its damages in the event the Bidder breaches its promise to enter into a contract with the HPHA and fails to execute the required bonds covering the work contemplated, if its BID is accepted.

(10) BIDDER. Any individual, partnership, firm, corporation, joint venture, or other legal entity submitting, directly or through a duly authorized representative or agent, a proposal for the work contemplated.

(11) BIDDING DOCUMENTS. The advertisement "Notice to Contractors", or invitation to bid, instructions to Bidders, proposal requirements, the bid form and the proposed Contract Documents including all addenda issued prior to receipt of Bids.

(12) BULLETIN. A written notice to the Contractor requesting a price and / or time proposal for contemplated changes preparatory to the issuance of a field order or change order.

(13) BY OR TO THE PROJECT ENGINEER. To avoid cumbersome and confusing repetition of expressions in these General Conditions, it is provided that whenever the following words or words of like import are used, they shall be understood as if they were followed by the words "by the Project Engineer" or "to the Project Engineer", unless the context clearly indicates another meaning: contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected or condemned.

(14) CALENDAR DAY. Any day shown on the calendar beginning at midnight and ending at midnight the following day. If no designation of calendar or working day is made, "day" shall mean calendar day.

(15) CHANGE ORDER. A written order signed by the Executive Director that establishes the full payment and final settlement of all claims for direct, indirect and consequential costs, including costs of delays, and establishes any adjustments to contract time related to the work covered and affected by one or more field orders, or for change work done or agreed to be done without issuance of a separate field order. A change order signed by all the parties to the contract constitutes a supplemental agreement.

(16) COMPLETION. See SUBSTANTIAL COMPLETION and FINAL COMPLETION.

(17) CONSULTANT. A person, firm or corporation having a contract with the HPHA to furnish services with respect to the project.

(18) CONTRACT. The written agreement between the Contractor and the HPHA by its Executive Director, by which the Contractor is bound to furnish all labor, equipment, and materials and to perform the specified work within the contract time stipulated, and by which HPHA is obligated to compensate the Contractor therefor at the prices set forth therein. The contract shall include the Contract Documents and also any and all amendments and change orders which are required to complete the construction in an acceptable manner.

(19) CONTRACT COMPLETION DATE. The calendar day on which all work on the project, required by the contract, must be completed. See CONTRACT TIME and FINAL COMPLETION.

(20) CONTRACT DOCUMENTS. The Contract, Addenda (which pertain to the Contract Documents, Contractor's Proposal (including Wage Schedule, List of Subcontractors and other documentation accompanying the Bid and any post bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the contract, the Notice to Proceed, the Bonds, these General Conditions, the SPECIAL CONDITIONS, the Specifications and the Drawings as the same are more specifically identified in the contract together with all written Amendments, Change Orders, Field Orders, any written order for minor changes in the work and Project Engineer's written interpretations and clarifications issued on or after the effective date of the contract.

(21) CONTRACT PRICE. The amount designated on the face of the contract for the performance of work including allowances, if any.

(22) CONTRACT TIME. The number of working or calendar days provided in the contract for completion of the contract, exclusive of authorized time extensions. The number of days shall begin running on the effective date in the Notice to Proceed. If in lieu of

providing a number of working or calendar days, the contract requires completion by a certain date, the work shall be completed by that date.

(23) CONTRACTOR. Any individual, partnership, firm, corporation, joint venture, or other legal entity undertaking the execution of the work under the terms of the contract with the State of Hawaii, and acting directly or through its agents, or employees.

(24) DRAWINGS (or Plans). The contract drawings in graphic or pictorial form, which show the design, location, character, dimensions and details of the Work to be done and which shall be a part of the Contract Documents.

(25) EQUAL OR APPROVED EQUAL. Whenever this term is used in the drawings or specifications, it shall be interpreted to mean a brand or article, prequalified in accordance with Section 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING, that may be used in place of the one specified.

(26) EXCESS BAD WEATHER DAY. A working day on which inclement weather prevents work on the contract and is beyond the average weather for the location of the project and the time of the year.

(27) EXECUTIVE DIRECTOR. The Executive Director of the Hawaii Public Housing Authority.

(28) FIELD ORDER. A written order issued by the Project Engineer to the Contractor requiring the contract work to be performed in accordance with a change or changes in the work. A field order may (1) establish a price adjustment and/or time adjustment in an amount the Project Engineer believes is reasonable for the change; or (2) may declare that the Project Engineer does not intend to adjust contract time or price for the work; or (3) may request the Contractor to submit a proposal for an adjustment to the contract time and/or price by a certain date.

(29) FINAL COMPLETION. The date set by the Executive Director that all work required by the contract and any amendments or changes thereto is in full compliance with the contract.

(30) FORCE ACCOUNT. Term used when Work is ordered to be done at the sole option of the HPHA and is to be billed for at cost of labor, materials and equipment, insurances, taxes, etc., plus a percentage for overhead and profit.

(31) GUARANTEE. Legally enforceable assurance of the duration of satisfactory performance of quality of a product or Work.

(32) HAZARDOUS MATERIALS. Any and all radioactive materials, asbestos, polychlorinated biphenyls, petroleum, crude oil, chemicals known to cause cancer or reproductive toxicity, pollutants, contaminants, toxic substances or materials cited in Hazardous Material Laws. Abandoned motor vehicles or parts thereof are not hazardous material.

(33) HPHA. Hawaii Public Housing Authority.

(34) HOLIDAYS. The days of each year which are set apart and established as State holidays pursuant to Chapter 8, Hawaii Revised Statutes.

(35) INSPECTOR. The person assigned by the HPHA to make detailed inspections of contract performance and materials supplied for the work.

(36) LAWS. All Federal, State, City and County Laws, ordinances, rules and regulations, and standard specifications, including any amendments thereto effective as of the date of the call for sealed bids.

(37) LIQUIDATED DAMAGES. The amount prescribed in the Special Conditions, LIQUIDATED DAMAGES to be paid to the HPHA or to be deducted from any payments due or to become due the Contractor for each working day or calendar day (as applicable) delay in completing the whole or any specified portion of the work beyond the Contract Time.

(38) LETTER OF AWARD. A written notice from the Executive Director to the successful Bidder(s) stating that its proposal has been accepted by the HPHA.

(39) MAJOR UNIT PRICE ITEM. A unit price item which, when extended on its estimated quantities in the proposal form, exceeds five percent (5%) of the total base bid proposal less any allowance and contingent items included in the proposal.

(40) NON-CONFORMING WORK. Work that does not meet the requirements of the Contract Documents.

(41) NOTICE TO BIDDERS/CONTRACTORS. The advertisement for proposals for all work or materials on which bids are required. Such advertisement will indicate the location of the work to be done or the character of the material to be furnished and the time and place of the opening of proposals.

(42) NOTICE TO PROCEED. A written notice from the Project Engineer to the Contractor advising it of the date on which it is to begin the prosecution of the Work, which date shall also be the beginning of Contract Time.

(43) POST CONTRACT DRAWINGS. Drawings issued after the award of the contract for the purpose of clarification and / or changes to the work indicated in the original drawings and which may be made a part of the contract.

(44) PROJECT ACCEPTANCE DATE. The calendar day on which the Project Engineer accepts the project as sufficiently completed in compliance with the contract so that the HPHA can occupy or utilize the Work for its intended use. See SUBSTANTIAL COMPLETION.

(45) PROJECT CONTRACT LIMITS (or CONTRACT ZONE). The portion of the site as delineated on the drawings which define the Contractor's primary area of operation for the prosecution of the work. It does not define the exact limits of all construction that may be required under the contract.

(46) PROJECT ENGINEER. The HPHA Contract Administrator as described in ARTICLE 5, CONTROL OF WORK.

(47) PROJECT GUARANTEE. A guarantee issued by the Contractor to the HPHA. See GUARANTEE.

(48) PUNCHLIST. A list compiled by the Project Engineer (or Contractor) stating work yet to be completed or corrected by the Contractor in order to substantially complete or finally-complete the contract requirements.

- (49) QUESTIONNAIRE. The specified forms on which the Bidder shall furnish required information as to its ability to perform and finance the work.
- (50) SHOP DRAWINGS/SUBMITTALS. All drawings, diagrams, illustrations, schedules and other data or information which are prepared or assembled by the Contractor and submitted by Contractor to illustrate some portion of the Work.
- (51) SPECIAL CONDITIONS. The specific clauses that supplements or modify the standard clauses of the GENERAL CONDITIONS setting forth conditions or requirements peculiar to the individual project under consideration, which are not thoroughly or satisfactorily covered, described or explained in these GENERAL CONDITIONS.
- (52) SPECIFICATIONS. That portion of the Contract Documents consisting of written descriptions for materials, equipment, construction systems, standards, workmanship, directions, provisions and requirements that pertain to the method and manner of performing the work and certain administrative requirements applicable thereto.
- (53) STATE. The State of Hawaii acting through its authorized representative.
- (54) SUBCONTRACT. Any written agreement between the Contractor and its subcontractors which contains the conditions under which the subcontractor is to perform a portion of the work for the Contractor.
- (55) SUBCONTRACTOR. An individual, partnership, firm, corporation, joint venture or other legal entity, as covered in Chapter 444, Hawaii Revised Statutes, which enters into an agreement with the Contractor to perform a portion of the work for the Contractor.
- (56) SUBSTANTIAL COMPLETION. The status of the project when the Contractor has completed all the work and (1) all utilities and services are connected and working; (2) all equipment is in acceptable working condition; (3) additional activity by the Contractor to correct punchlist items as described herein will not prevent or disrupt use of the work or the facility in which the work is located; and 4) the building, structure, improvement or facility can be used for its intended purpose.
- (57) SUPERINTENDENT. The employee of the Contractor, authorized to receive and fulfill instructions from the Project Engineer, who is charged with the responsibility of all the Work.
- (58) SURETY. The qualified individual, firm or corporation other than the Contractor, which executes a bond with and for the Contractor to ensure its acceptable performance of the contract.
- (59) UNUSUALLY SEVERE WEATHER. Uncommonly harsh weather including but not limited to hurricanes, tornadoes, tropical storms and tropical depressions—(See General Conditions, Section 7.21.8.6).
- (60) WORK. The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient for the successful completion of the project and the execution of all the duties and obligations imposed by the contract.
- (61) WORKING DAY. A calendar day, exclusive of Saturdays, Sundays and State-recognized legal holidays for the month in question.

ABBREVIATIONS

HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
VECP	Value Engineering Cost Proposal
DOTAX	State Department of Taxation
IRS	Internal Revenue Service

END OF ARTICLE 1

ARTICLE 2 - BID REQUIREMENTS AND CONDITIONS

2.1 QUALIFICATION OF BIDDERS - Prospective Bidders must be capable of performing the work for which bids are invited, and must be capable of entering into a public contract of \$25,000 (twenty five thousand dollars) or more.

2.1.1 NOTICE OF INTENTION TO BID

2.1.1.1 In accordance with Section 103D-310, Hawaii Revised Statutes, and Section 3-122-108, Hawaii Administrative Rules, a written notice of intention to bid must be filed for the construction of any public building or public work when the bid is \$25,000 (twenty five thousand dollars) or more. A written notice of intention to bid need not be filed for the mere furnishing and installing of furniture, equipment, appliances, material and any combination of these items when a Contractor's license is not required under Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board.

2.1.1.2 The written notice must be addressed to the Executive Director, who is the officer charged with letting the contract. The words, "INTENTION TO BID" must be clearly written or typed on the face of the envelope containing the written notice of intention to bid. The notice may be faxed, hand carried or mailed to the office indicated in the Notice to Contractors.

2.1.1.3 The written notice must be received by the office indicated in the Notice to Contractors no later than 2:00 p.m. on the 10th calendar day prior to the day designated for opening bids. If the 10th calendar day prior to the day designated for opening bids is a Saturday, Sunday, or legal State holiday, then the written notice must be received by the HPHA no later than 2:00 p.m. on the last working day immediately prior to said Saturday, Sunday, or legal State holiday. The written notice will be time stamped when received by said office. The time designated by the time stamping device in said office shall be official. If the written notice is hand carried, then the bearer is responsible to ensure that the notice is time stamped by said office. If the notice is faxed, the time of receipt by the HPHA fax machine shall be official.

2.1.1.4 It is the responsibility of the prospective Bidder to ensure that the written notice of intention to bid is received in time and the HPHA assumes no responsibility for failure of timely delivery caused by the prospective Bidder or by any method of conveyance chosen by the prospective Bidder.

2.1.1.5 If two (2) or more prospective Bidders desire to bid jointly as a joint venture on a single project, they must file an affidavit of joint venture with their notice of intention to bid. Such affidavit of joint venture will be valid only for the specific project for which it is filed. No further license is required when all parties to the joint venture possess current and appropriate contractor's licenses. Joint ventures are required to be licensed in accordance with Chapter 444 of the Hawaii Revised Statutes, as amended; and the rules and regulations of the Contractor's License Board when any party to the joint venture agreement does not hold a current or appropriate contractor's license. The joint venture must register with the office of the Director of Commerce and Consumer Affairs in accordance with Chapter 425 of the Hawaii Revised Statutes, as amended.

2.1.1.6 No persons, firm or corporation may bid where (1) the person, firm, or corporation, or (2) a corporation owned substantially by the person, firm, or corporation, or (3) a substantial stockholder or an officer of the corporation, or (4) a partner or substantial investor in the firm is in arrears in any payment owed to the State of Hawaii or any of its political subdivisions or is in default of any obligation to the State of Hawaii or to all or to any of its political subdivisions, including default as a surety or failure to perform faithfully and diligently any previous contract with the HPHA.

2.1.1.7 The Executive Director may, in accordance with Section 103D-310 Hawaii Revised Statutes, require the prospective Bidder to submit answers to questions contained in the STANDARD QUALIFICATION QUESTIONNAIRE FOR PROSPECTIVE BIDDERS ON PUBLIC WORKS CONTRACTS, on the form provided by the HPHA, properly executed and notarized, setting forth a complete statement of the experience of such prospective Bidder and its organization in performing similar work and a statement of the equipment proposed to be used, together with adequate proof of the availability of such equipment, at least five (5) working days prior to the time advertised for the opening of bids. If the information in the questionnaire proves satisfactory, the Bidder's bid will be received. All information contained in the answers to the questionnaire shall be kept confidential. The questionnaire will be returned to the Bidder after it has served its purpose.

2.1.1.8 If upon review of the Questionnaire, or otherwise, the Bidder appears not fully qualified or able to perform the intended work, the Executive Director shall, after affording the Bidder an opportunity to be heard and if still of the opinion that the Bidder is not fully qualified to perform the work, refuse to receive or to consider any bid offered by the prospective Bidder.

2.1.1.9 Failure to complete and submit the prequalification questionnaire by the designated deadline will be sufficient cause for the HPHA to disqualify a prospective Bidder.

2.1.2 TAX CLEARANCE (§103D-328 HRS)

2.1.2.1 Contractors are required to provide both state and federal tax clearances as a prerequisite to entering into a public contract of \$25,000 or more. To meet this requirement, all Bidders shall submit valid tax clearances with their bid proposals when the bid is \$25,000 or more. An additional tax clearance will be required before final payment can be made.

2.1.2.2 Tax clearances may be obtained by completing the Tax Clearance Application (Form A-6) and submitting it to the Hawaii State Department of Taxation (DOTAX) or the Internal Revenue Service (IRS). The application may be obtained from the DOTAX, the IRS, or the Public Works Division, Kalanimoku Building, Room 422, 1151 Punchbowl Street, Honolulu, Hawaii. The application may be mailed in or walked in to either the DOTAX or the IRS. Both tax agencies encourage the use of their mail-in process, which should be completed within twenty-one (21) calendar days. Tax clearance certificates will be issued to the applicant upon determination that the applicant has filed all tax returns due, and has paid all amounts owing on such returns, including penalty and interest.

2.1.2.3 Only original tax clearance certificates or certified copies will be accepted for this purpose. Failure to submit the required tax clearance certificates may be sufficient grounds for the HPHA to refuse to receive or consider the prospective Bidder's proposal.

2.1.2.4 Tax clearance certificates are valid for six (6) months. The six-month period will begin with the later approval date stamped on the tax clearance. An original copy of a tax clearance that bears an original green certified copy stamp will be accepted by the HPHA for final payment. The period of validity for final payment is forty-five (45) days.

2.1.2.5 The tax clearances submitted with the bid proposals must be valid on the solicitation's first legal advertisement date or any date thereafter up to the bid opening date. Valid tax clearances submitted with the bid will remain valid for the contract award and encumbrance.

2.1.2.6 Any person, firm or corporation that is not presently doing business in the State of Hawaii and submits a Notice of Intention to Bid must submit along with said Notice of Intention to Bid a certified letter stating that said person, firm or corporation is not doing business in the State of Hawaii and is not in default of any obligations due to the State or any of its political subdivisions.

2.1.2.7 If a business cannot obtain a tax clearance certificate because of tax delinquencies, it may submit a "special letter" from DOTAX and/or the IRS. The "special letter" may only be obtained if (1) the business has an existing installment agreement with the tax agency, or (2) the delinquency is the subject of an administrative or judicial appeal. The Bidder is cautioned that the "special letter" from the IRS must be certified by DOTAX. All conditions applied to tax clearance certificates for this purpose are applicable to these "special letters". Instructions to obtain the "special letter" are available from each respective tax agency.

2.1.2.8 Various combinations of tax clearance certificates and "special letters" are acceptable for this purpose as follows:

- (a) Tax clearance certificate signed by both tax agencies;
- (b) Individual tax clearance certificates from each tax agency, respectively;
- (c) Tax clearance certificate from one tax agency and a "special letter" from the other tax agency;
- (d) "Special letters" from both tax agencies.

2.1.3 **WRONGFUL REFUSAL TO ACCEPT A BID** - In the event the Executive Director, for any reason, wrongfully refuses to accept what would otherwise be a responsive and responsible lowest bid, the exclusive remedy for such lowest Bidder shall be the recovery of the reasonable actual costs of preparing the bid. No other Bidder shall have any claim for damages. Refer to Section 2.14, PROTESTS.

2.2 INTERPRETATION OF QUANTITIES IN BID SCHEDULE

2.2.1 When quantities for individual items of work are listed in the proposal form for which respective unit prices are asked, said quantities are estimated or approximate and are to be used by the HPHA only for the purpose of comparing on a uniform basis bids offered for the work. The HPHA does not, expressly or by implication agree that the actual quantity of work will correspond therewith.

2.2.2 After determining the low Bidder by comparison of bids submitted in accordance with the bid form and Section 3.1, **CONSIDERATION OF BID; CANCELLATION** in these Contract Documents, the quantities of unit price items of work may increase or decrease.

2.2.3 On unit price bids, payment will be made only for the actual number of units incorporated into the finished project at the unit price bid, subject to Section 4.7, VARIATIONS IN ESTIMATED QUANTITIES. It is understood and agreed that the Contractor shall make no claim for anticipated profit, loss of profit or unabsorbed field, branch or home office overhead and impact losses due to the exercise of the HPHA right to eliminate entire portions of the work or to increase or decrease any or all the quantities shown in the proposal form.

2.3 CONTENTS OF BID FORMS

2.3.1 Prospective Bidders will be furnished with bid forms giving the location, description, and the contract time of the work contemplated for which a lump sum bid price is asked or containing a schedule of items, together with estimated quantities of work to be performed and materials to be furnished, for which unit bid prices and/or lump sum bid prices are asked.

2.3.2 All papers bound with or attached to the bid form shall be considered a part thereof and shall not be detached or altered when the bid is submitted.

2.3.3 The drawings, specifications and other documents designated in the bid form will also be considered a part thereof whether attached or not.

2.3.4 By submitting a bid on the bid form, a Bidder accepts the language therein as its own.

2.4 BIDDER'S RESPONSIBILITY FOR EXAMINATION OF CONTRACT DOCUMENTS, SITE OF WORK, ETC.

2.4.1 The Bidder shall carefully examine the project site contemplated all Contract Documents and any documents or items referenced therein and contract and bond forms therefore. The submission of a bid shall be considered as a warranty that the Bidder has made such examination and is informed of the conditions to be encountered in performing the Work and of the requirements of the Contract Documents and any documents and items referenced therein, and contract and bonds.

2.5 UTILITIES AND SERVICES

2.5.1 Where its operations are next to or near properties of utility companies or other property, the Contractor shall not start work until the Contractor makes arrangements necessary for the protection of said property.

2.5.2 The Contractor shall cooperate, coordinate and schedule its work to suit the owners of underground or overhead utility lines or other property in removing or altering such lines or providing new services in order for the work to progress according to the contract. Cooperation includes rearranging the Contractor's operations and normal work schedules and realignment of work as approved by the HPHA in order to accommodate the operations and work of the utilities and/or other property in and around the work site at no additional cost to the HPHA.

2.5.3 The Contractor shall contact all the various utility companies before the start of the work to ascertain any existing utilities and to develop a full understanding of the utility requirements with respect to this project. The Contractor shall furnish the Project Engineer with evidence that the Contractor has contacted the utility companies.

2.5.4 If the Contractor discovers that the existence and location of utilities in the contract plans are not correct, the Contractor shall not disturb the utilities and immediately notify the Project Engineer. The Project Engineer will advise the Contractor regarding actions to take.

2.5.5 The Contractor shall ascertain the exact location and depth of utilities within the project area. The Contractor shall mark such locations to warn workers or equipment operators of their existence and location. The Contractor shall be responsible to acquaint personnel working near utilities with the type, size, location and depth of the utilities and the consequences that might result from disturbances. The Contractor shall not start trenching or start similar operations until the Contractor has taken reasonable and appropriate precautions to protect the utilities.

2.5.6 Any utilities or other property that the Contractor encounters during the progress of the work, such as telephone ducts, electric ducts, water lines, sewer lines, electric lines and drainage pipes, whether shown or not on the contract plans, shall not be disturbed or damaged unless otherwise instructed in the plans and specifications.

2.5.7 In the event the utilities or other property are damaged or disturbed by the Contractor, the Contractor shall be liable for all such damage where the utilities or other property are:

- (a) Shown on the plan in its actual or approximate location; or
- (b) Exposed on the job as it progresses; or
- (c) Pointed out to the Contractor in the field.

2.5.8 Such utilities or other property as described above shall be "known utilities or other property." If the Contractor encounters an unknown utility or other property, it shall not proceed until it has notified the Project Engineer and receives instructions. If the Project Engineer directs additional work, it shall be paid for under Section 4.2, CHANGES.

2.5.9 The Contractor shall repair and restore to pre-damaged condition any utilities or any other property it may damage, and it shall be liable for any and all resulting damage at no cost to the HPHA, the work or utility owner or property owner. Any damage claim due to the disruption of service caused by the utilities being damaged shall be paid by the Contractor who shall defend, indemnify and hold harmless the HPHA from all suits, actions or claims of any character brought on account of such damages, whether or not the HPHA may have been partially at fault. Public liability and property damage insurance to be obtained by the Contractor pursuant to ARTICLE 7, PROSECUTION AND PROGRESS shall cover such risk of damage.

2.5.10 In the event the Contractor simultaneously with the discovery of an unknown utility or other property damages that utility or other property, the Contractor shall not be held liable beyond the extent of the Contractor's liability insurance but shall immediately notify the Project Engineer. Upon instruction from the Project Engineer, the Contractor shall repair all damages and execute a plan for dealing with the damaged utility or other property. This repair work shall be considered additional work as covered in Section 4.2, CHANGES.

2.6 ADDENDA AND BID CLARIFICATIONS

2.6.1 The terms and requirements of the bid documents (i.e. drawings, specifications and other bid and contract documents) cannot be changed prior to the bid opening except by a duly issued addendum.

2.6.2 The HPHA may alter, increase or decrease the scope of the work or the contract time, provisions and conditions by issuing a written addendum which sets forth such alterations, increase or decrease.

2.6.3 If a Bidder discovers what it considers to be a discrepancy, ambiguity, omission or doubt as to the meaning of drawings, specifications and any other bid or contract documents, the Bidder shall request in writing an interpretation from the Executive Director.

2.6.4 If the HPHA agrees that a discrepancy, ambiguity, omission or doubt exists, it shall issue a written addendum to the bid documents to all prospective Bidders at the respective offices furnished for such purposes eight (8) days before the bids are opened. The HPHA may extend the bid opening to allow at least eight (8) days from the notification date of the addendum. Upon notification by the HPHA, all Bidders/addressees shall be deemed to be on notice of the information therein whether or not the addendum is actually received. All addenda so issued shall become part of the contract documents.

2.6.5 No claim for additional compensation and/or time for performance will be allowed if the Contractor discovered, or in the exercise of reasonable care, should have discovered a discrepancy, ambiguity, omission or doubt for which an interpretation was not requested.

2.7 SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING

2.7.1 Brand names of materials or equipment are specified or shown on the drawings to indicate a quality, style, appearance or performance and not to limit competition. The Bidder shall base its bid on one of the specified brand names unless alternate brands are qualified as equal or better in an addendum. Qualifications of such proposed alternate brands shall be submitted in writing and addressed to the Project Engineer. The face of the envelope containing the request must be clearly marked "SUBSTITUTION REQUEST". The request may be hand carried or mailed to HPHA, 1002 North School Street, Building D, Honolulu, Hawaii 96817. In either case, the written request must be received by HPHA no later than fourteen (14) days before the bid opening date and time specified in the Notice to Bidders. The written request will be time stamped by HPHA. For the purpose of this section, the time designated by the time stamping device in HPHA shall be official. If the written request is hand carried, the bearer is responsible to ensure that the request is time stamped by HPHA.

2.7.2 Submit three (3) sets of the written request, technical brochures, and a statement of variances. Refer to the Appendix for the Sample "Request for Substitution."

2.7.3 **STATEMENT OF VARIANCES.** The statement of variances must list all features of the proposed substitution which differ from the drawings, specifications and/or product(s) specified and must further certify that the substitution has no other variant features. The brochure and information submitted shall be clearly marked showing make, model, size, options, etc., and must include sufficient evidence to evaluate each feature listed as a variance. A request will be denied if submitted without sufficient evidence. If after installing the substituted product, an unlisted variance is discovered, Contractor shall immediately replace the product with a specified product at no cost to the HPHA.

2.7.4 **SUBSTITUTION DENIAL** - Any substitution request not complying with the above requirements will be denied. Substitution requests sent to other agencies and received by Project Engineer after the deadline above will be denied.

2.7.5 An addendum shall be issued to inform all prospective Bidders of any accepted substitution in accordance with Section 2.6, ADDENDA AND BID CLARIFICATIONS.

2.7.6 For substitutions of materials and equipment after issuance of the Letter of Award, refer to Section 6.3, SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING.

2.8 PREPARATION OF BID

2.8.1 The Bidder's bid must be submitted on the bid form furnished by the HPHA. The bid must be prepared in full accordance with the instructions thereon. The Bidder must state, both in words and numerals, the lump sum price or total sum bid at which the work contemplated is proposed to be done. These prices must be written in ink or typed. In case of a discrepancy between the prices written in words and those written in figures, the words shall govern over the figures. The Bidder shall sign the bid in the spaces provided with ink. By submitting a bid, the Bidder adopts the language of the bid as its own.

2.8.2 If the bid is made by an individual, the person's name and post office address must be shown in the space provided. If made by a partnership the name and post office address of each member of the partnership must be shown and the bid signed by all partners or evidence in the form of a partnership agreement must be submitted showing the authority of the partner to enter, on behalf of said partnership, into contract with the HPHA. If made by a corporation the bid must show the name, title and business address of the president, secretary and treasurer and also evidence in the form of a corporate resolution must be submitted showing the authority of the particular corporate representative to enter on behalf of said corporation into contract with the HPHA. If made by a joint-venture the name and post office address of each member of the individual firm, partnership or corporation comprising the joint-venture must be shown with other pertinent information required of individuals, partnerships or corporations as the case may be. The proposal must be signed by all parties to the joint-venture or evidence in the form of a Joint-Venture Agreement must be submitted showing the authority of the joint-venture's representative to enter on behalf of said joint-venture into contract with the HPHA.

2.8.3 Pursuant to the requirements of Section 103D-302, HRS, each Bidder shall include in its bid the name of each person or firm to be engaged by the Bidder on the project as joint contractor or subcontractor indicating also the nature and scope of work to be performed by such joint contractor and/or subcontractor and their respective contractor's license number. A joint contractor or subcontractor performing less than or equal to one percent of the total bid amount is not required to be listed in the proposal. The Bidder shall be solely responsible for verifying that their joint contractor or subcontractor has the proper license at the time of the submitted bid.

2.9 BID SECURITY

2.9.1 Subject to the exceptions in Section 3-122-223(d) HAR, all lump sum bids of \$25,000 (twenty five thousand dollars) and higher, or lump sum base bids including alternates of \$25,000 (twenty five thousand dollars) and higher, that are not accompanied by bid security are non-responsive. Bid security shall be one of the following: §3-122-222(a) HAR

2.9.1.1 Surety bid bond underwritten by a company licensed to issue bonds in this State which shall be substantially in the form of the Surety Bid Bond form in the Appendix; or

2.9.1.2 Legal Tender; or

2.9.1.3 Certificate of Deposit; credit union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

(a) These instruments may be utilized only to a maximum of \$100,000 (one hundred thousand dollars).

(b) If the required security or bond amount totals over \$100,000 (one hundred thousand dollars), more than one instrument not exceeding \$100,000 (one hundred thousand dollars) each and issued by different financial institutions shall be accepted.

(c) CAUTION - Bidders are cautioned that certificates of deposit or share certificates with an early withdrawal penalty must have a face value sufficient to cover the maximum penalty amount in addition to the bid guaranty requirement. If the certificate is made out to two names, the certificate must be assigned unconditionally to the Executive Director.

2.9.2 Unless otherwise stated, the bid security shall be in an amount equal to at least five percent (5%) of the lump sum bid or lump sum base bid including all additive alternates or in an amount required by the terms of the federal funding, where applicable.

2.9.3 If the Bidder is a corporation, evidence in the form of a corporate resolution, authorizing the corporate representative to execute the bond must be submitted with the bid. (See sample in Appendix.) If the Bidder is a partnership, all partners must sign the bond or evidence in the form of a partnership agreement must be submitted showing the authority of the partner.

2.9.4 If the Bidder is a joint-venture, all parties to the joint-venture must sign the bond; provided, that one party to the joint-venture may sign on behalf of the joint-venture if evidence in the form of a joint-venture agreement or power of attorney, is submitted showing the authority of the signatory to sign the bond on behalf of the joint-venture.

2.9.5 In the case where the award will be made on a group or item basis, the amount of bid security shall be based on the total bid for all groups or items submitted.

2.9.6 Bidders are cautioned that surety bid bonds which place a limit in value to the difference between the bid amount and the next acceptable bid, such value not to exceed the purported amount of the bond, are not acceptable. Also, surety bid bonds which place a time limit on the right of the State to make claim other than allowed by statutes or these GENERAL CONDITIONS are not acceptable. Bidders are hereby notified that a surety bid bond containing such limitation(s) is not acceptable and a bid accompanied by such surety bid bond will be automatically rejected.

2.10 DELIVERY OF BIDS - The entire bid shall be placed together with the bid security, in a sealed envelope no smaller than 9-1/2" x 12" so marked as to indicate the identity of the project, the project number, the date of bid opening and the name and address of the Bidder and then delivered as indicated in the Notice to Contractors. Bids which do not comply with this requirement may not be considered. Bids will be received up to the time fixed in the public notice for opening of bids and must be in the hands of the official by the time indicated. The words "SEALED BID" must be clearly written or typed on the face of the sealed envelope containing the bid and bid security.

2.11 WITHDRAWAL OR REVISION OF BID - Bid may be modified prior to the deadline to submit the bid by any of the following documents:

2.11.1 Withdrawal of Bids:

2.11.1.1 A signed, written notice received in the office designated in the solicitation; or

2.11.1.2 A signed written notice faxed to the office designated in the solicitation.

2.11.2 Modification of Bids:

2.11.2.1 A signed written notice received in the office designated in the solicitation, accompanied by a duly executed certificate of resolution for corporations, partnerships and joint-ventures, stating that a modification to the bid is submitted; and

2.11.2.2 The actual modification sealed securely in a separate envelope or container, accompanying the written notice.

2.12 PUBLIC OPENING OF BIDS - Bids will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders, their authorized agents and other interested parties are invited to be present.

2.13 DISQUALIFICATION OF BIDDERS - Any one or more of the following causes will be considered as sufficient for the disqualification of a Bidder and the rejection of its bid or bids:

2.13.1 Non-compliance with Section 2.1, QUALIFICATION OF BIDDERS;

2.13.2 Evidence of collusion among Bidders;

2.13.3 Lack of responsibility and cooperation as shown by past work such as failing to complete all of the requirements to close the project within a reasonable time or engaging in a pattern of unreasonable or frivolous claims for extra compensation;

2.13.4 Being in arrears on existing contracts with the State of Hawaii, or having defaulted on a previous contract with the State of Hawaii;

2.13.5 Lack of proper equipment and/or sufficient experience to perform the work contemplated, as revealed by the Standard Questionnaire and Financial Statement for Bidders;

2.13.6 No contractor's license or a contractor's license which does not cover type of work contemplated;

2.13.7 More than one bid for the same work from an individual, firm, partnership, corporation or joint venture under the same or different name;

2.13.8 Delivery of bids after the deadline specified in the advertisement calling for bids;

2.13.9 Failure to pay, or satisfactorily settle, all bills overdue for labor and materials of former contracts in force at the time of issuance of bid forms; and/or

2.13.10 Debarment or suspension pursuant to the provisions of Chapters 103D, 104 and 444, Hawaii Revised Statutes, as amended.

2.14 PROTESTS

2.14.1 Protests shall be adjudicated in accordance with §103D-701, HRS and as amended.

2.14.2 No Protest based upon the contents of the solicitation shall be considered unless it is submitted in writing to the Executive Director, prior to the date set for the receipt of bids.

2.14.3 A protest of an award or bid award pursuant to §103D-302 HRS, shall be submitted in writing to the Executive Director, within five (5) working days after the posting of the award of the Contract.

2.14.4 When a protest is sustained and the protestor should have been awarded the contract under the solicitation but is not, then the exclusive remedy for such protestor shall be the recovery of the reasonable actual costs of preparing the bid, but not attorney's fees.

END OF ARTICLE 2

ARTICLE 3 – AWARD AND EXECUTION OF CONTRACT

3.1 CONSIDERATION OF BIDS; CANCELLATION - After the bids are opened and read the results shall be made public. In the event of a tie bid, the low Bidder shall be determined by lot. In the comparison of bids, words written in the bids will govern over figures and unit prices will govern over totals. Until the award of the contract, the HPHA may cancel the solicitation, reject any and all bids in whole or part and may waive any defects or technicalities whenever such action is deemed to be in the best interest of the HPHA.

3.2 NON RESPONSIVE BIDS - Bids will be considered non responsive and may be rejected for the following reasons:

3.2.1 If the bid is unsigned.

3.2.2 If bid security is not in accordance with Section 2.9, BID SECURITY.

3.2.3 If bid is on a form other than that furnished by the HPHA; or if the form is altered or any part thereof detached.

3.2.4 If the bid shows any non-compliance with applicable law, alteration of form, additions not called for, conditional bids, incomplete bids, non-initialed erasures, other defects, or if the prices are obviously unbalanced.

3.2.5 If the Bidder adds any provisions reserving the right to accept or reject an award.

3.2.6 If the Bidder adds any provisions reserving the right to enter into a contract pursuant to an award.

3.2.7 When a bid is signed by an officer or officers of a corporation and a currently certified corporate resolution authorizing such signer(s) to submit such bid is not submitted with the bid or when the bid is signed by an agent other than the officer or officers of a corporation or a member of a partnership and a power of attorney is not submitted with the bid.

3.2.8 Where there is an incomplete or ambiguous listing of joint contractors and/or subcontractors the bid may be rejected. All work which is not listed as being performed by joint contractors and/or subcontractors must be performed by the Bidder with its own employees. Additions to the list of joint contractors or subcontractors will not be allowed. Whenever there is a doubt as to the completeness of the list, the Bidder will be required to submit within five (5) working days, a written confirmation that the work in question will be performed with its own work force. Whenever there is more than one joint contractor and/or subcontractor listed for the same item of work, the Bidder will be required to either confirm in writing within five (5) working days that all joint contractors or subcontractors listed will actually be engaged on the project or obtain within five (5) working days written releases from those joint contractors and/or subcontractors who will not be engaged.

3.2.9 If in the opinion of the Executive Director, the Bidder and/or its listed subcontractors do not have the contractor's licenses or combination of contractor's licenses necessary to complete all of the work.

3.3 CORRECTION OF BIDS AND WITHDRAWAL OF BIDS (§3-122-31 HAR)

3.3.1 Corrections to bids after bid openings but prior to award may be made under the following conditions:

3.3.1.1 If the mistake is attributable to an arithmetical error, the Executive Director shall so correct the mistake. In case of error in extension of bid price, the unit price shall govern.

3.3.1.2 If the mistake is a minor informality which shall not affect price, quantity, quality, delivery, or contractual conditions, the Bidder shall request correction by submitting proof of evidentiary value which demonstrates that a mistake was made. The Executive Director shall prepare a written approval or denial in response to this request. Examples of such mistakes include:

- (a) Typographical errors;
- (b) Transposition errors;
- (c) Failure of a Bidder to sign the bid, but only if the unsigned bid is accompanied by other material indicating the Bidder's intent to be bound.

3.3.1.3 For reasons not allowable under Subsections 3.3.1.1 and 3.3.1.2 when the Executive Director determines that the correction or waiver of an obvious mistake is in the best interest of the HPHA or is warranted for the fair treatment of other Bidders.

3.3.2 Withdrawal of bids after bid opening but prior to award may be made when the bid contains a mistake attributable to an obvious error which affects price, quantity, quality, delivery, or contractual conditions, and the Bidder requests withdrawal by submitting proof of evidentiary value which demonstrates that a mistake was made. The Executive Director shall prepare a written approval or denial in response to this request.

3.3.3 Correction or withdrawal of bids after award is not permissible except in response to a written withdrawal or correction request by the Contractor, and the Executive Director makes a written determination that the HPHA's procurement practices and policies would not be materially affected by such correction or withdrawal.

3.4 AWARD OF CONTRACT

3.4.1 The award of contract, if it be awarded, will be made after all necessary investigations are made. The successful Bidder will be notified, by letter mailed to the address shown on the bid, that its bid has been accepted and that it has been awarded the contract.

3.4.2 If the contract is not awarded within the one hundred twenty (120) days the HPHA may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the HPHA may at its sole discretion make a similar offer to the next lowest responsive and responsible Bidder and so on until a bid is duly accepted or until the HPHA elects to stop making such requests.

3.4.3 No contract will be awarded to any person or firm suspended or debarred under the provisions of Chapters 103D, 104 and Chapter 444, Hawaii Revised Statutes as amended.

3.4.4 The contract will be drawn on the forms furnished by the Executive Director. The contract will not be binding on the HPHA until all required signatures have been affixed thereto and written certification that funds are available for the work has been made.

3.5 CANCELLATION OF AWARD - The HPHA reserves the right to cancel the award of any contract at any time before the execution of said contract by all parties. The exclusive remedy to the awardee for such cancellation shall be payment of the reasonable bid preparation costs and the reimbursement of any direct expenses incurred as directed in the Notice of Award. Such cancellation will not incur any liability by the HPHA to any other Bidder.

3.6 RETURN OF BID SECURITY - All bid securities, except those of the four (4) lowest Bidders, will be returned following the opening and checking of the bids. The retained bid securities of the four lowest Bidders will be returned within five (5) working days following the complete execution of the contract.

3.7 REQUIREMENT OF PERFORMANCE AND PAYMENT BONDS

3.7.1 Performance and Payment Bonds shall be required for contracts \$25,000 (twenty five thousand dollars) and higher. At the time of the execution of the contract, the successful Bidder shall file good and sufficient performance and payment bonds on the form furnished by the HPHA (see Appendix), each in an amount equal to one hundred percent (100%) of the amount of the contract price unless otherwise stated in the solicitation of bids. Acceptable performance and payment bonds shall be limited to the following:

3.7.1.2 Surety bonds underwritten by a company licensed to issue bonds in this State; or

3.7.1.3 A certificate of deposit; legal tender (cash); credit union share certificate; or cashier's, treasurer's, teller's or official check drawn by, or a certified check accepted by, and payable on demand to the HPHA by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.

(a) These instruments may be utilized only a maximum of \$100,000 (one hundred thousand dollars).

(b) If the required security or bond amount totals over \$100,000 (one hundred thousand dollars), more than one instrument not exceeding \$100,000 (one hundred thousand dollars) each and issued by different financial institutions shall be acceptable.

3.7.2 If the Contractor fails to deliver the required performance and payment bonds, the Contractor's award shall be canceled, the HPHA shall have the remedies provided under Section 3.9, FAILURE TO EXECUTE THE CONTRACT and award of the contract shall be made to the next lowest responsible and responsive Bidder.

3.8 EXECUTION OF THE CONTRACT

3.8.1 The contract shall be signed by the successful Bidder and returned, together with satisfactory performance and payment bonds, along with the Tax Certificate and Insurance Certificate, within ten (10) calendar days after the Bidder is awarded the contract for execution or within such further time as the Executive Director may allow. No bid or contract shall be considered binding upon the HPHA until the contract has been fully and properly executed by all parties thereto. For projects funded with State Capital Improvement Project (CIP) funds, the Executive Director shall also endorse thereon its certificate, as required by Section 103D-309, HRS, that there is an available unexpended appropriation or

balance of an appropriation over and above all outstanding contracts sufficient to cover the HPHA's amount required by such contract.

3.8.2 On any individual award totaling less than \$25,000 (twenty five thousand dollars), the HPHA reserves the right to execute the contract by the issuance of a Purchase Order. Issuance of a Purchase Order shall result in a binding contract between the parties without further action by the HPHA. The issuance of a Purchase Order shall not be deemed a waiver of these General Conditions, and Contract Document requirements.

3.9 FAILURE TO EXECUTE THE CONTRACT

3.9.1 Before the Award - If a low Bidder without legal justification withdraws its bid after the opening of bids but before the award of the contract, the HPHA shall be entitled to retain as damages the amount established as bid security, and may take all appropriate actions to recover the damages sum from the property or third-party obligations deposited as bid security.

3.9.2 After the Award - If the Bidder to which a contract is awarded shall fail or neglect to enter into the contract and to furnish satisfactory security within ten (10) calendar days after such award or within such further time as the Executive Director may allow, the HPHA shall be entitled to recover from such Bidder its actual damages, including but not limited to the difference between the bid and the next lowest responsive bid, as well as personnel and administrative costs, consulting and legal fees and other expenses incurred in arranging a contract with the next low responsible and responsive Bidder or calling for new bids. The HPHA may apply all or part of the amount of the bid security to reduce its damages. If upon determination by the HPHA that the bid security exceeds the amount of its damages, it shall release or return the excess to the person who provided same.

3.9.3 Executive Director's Options - Upon a withdrawal of the lowest responsive bid, or upon a refusal or failure of the lowest Bidder to execute the contract, the Executive Director may thereupon award the contract to the next lowest responsible and responsive Bidder or may call for new bids, whichever method the Executive Director may deem to be in the best interests of the HPHA.

3.10 NOTICE TO PROCEED

3.10.1 After the contract is fully executed and signed by the Executive Director, the Contractor will be sent a formal Notice to Proceed letter advising the Contractor of the date on which it may proceed with the work. The Contractor shall be allowed ten (10) consecutive working days from said date to begin its work. In the event that the Contractor refuses or neglects to start the work, the Executive Director may terminate the contract in accordance with Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

3.10.2 The Contractor may commence its operations strictly at its own risk prior to receipt of the formal notice to proceed, provided it makes a written request and has received approval from the Executive Director in writing. All work performed shall be conducted in accordance with Section 7.1, PROSECUTION OF THE WORK.

3.10.3 In certain cases, the HPHA, with agreement of the Contractor, may issue a Notice to Proceed before full execution of the contract by the Executive Director and it may further issue a Notice to Proceed concurrently with the Notice of Award.

3.10.4 In the event the Notice to Proceed is not issued within one hundred eighty (180) days after (1) the date the contract is executed by all parties; or (2) for projects funded with State Capital Improvement Project (CIP) funds, the date that the written certificate that

funds are available is issued, whichever is later, the Contractor may submit a claim for increased labor and material costs (but not overhead costs) which are directly attributable to the delay beyond the first one hundred eighty (180) days. Such claims shall be accompanied with the necessary documentation to justify the claim. No payment will be made for assumed escalation costs.

3.11 RELATIONSHIP OF PARTIES: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.

3.11.1 In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE's opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.

3.11.2 The CONTRACTOR and the CONTRACTOR's employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR's employees and agents shall not be entitled to claim or receive from the STATE any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.

3.11.3 The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR's performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR's employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR's employees or agents in the course of their employment.

3.11.4 The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.

3.11.5 The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with Section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, showing that all delinquent taxes, if any, levied or accrued under state law against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under Sections 103-53 and 237-45, HRS, and Section 8.8, FINAL PAYMENT of these General Conditions.

3.11.6 The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR's employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

3.12

PERSONNEL REQUIREMENTS:

3.12.1 The CONTRACTOR shall secure, at the CONTRACTOR's own expense, all personnel required to perform this Contract.

3.12.2 The CONTRACTOR shall ensure that the CONTRACTOR's employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

3.13 NONDISCRIMINATION - No person performing work under this Contract, including any subcontractor, employee, or agent of the Contractor, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

3.14 CONFLICTS OF INTEREST - The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR's performance under this Contract.

END OF ARTICLE 3

ARTICLE 4 - SCOPE OF WORK

4.1 INTENT OF CONTRACT, DUTY OF CONTRACTOR - The intent of the Contract is to provide for the construction, complete in every detail, of the work described at the accepted bid price and within the time established by the contract. The Contractor has the duty to furnish all labor, materials, equipment, tools, transportation, incidentals and supplies and to determine the means, methods and schedules required to complete the work in accordance with the drawings, specifications and terms of the contract.

4.1.1 ENTIRE CONTRACT - This Contract sets forth all of the Contract, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior Contracts, conditions, understandings, promises, warranties and representations, which shall have no further force or effect. There are no Contracts, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.

4.2 CHANGES - The Project Engineer may at any time, during the progress of the work, by written order, and without notice to the sureties, make changes in the work as may be found to be necessary or desirable. Such changes shall not invalidate the Contract nor release the Surety, and the Contractor will perform the work as changed, as though it had been a part of the original Contract.

4.2.1 MINOR CHANGES - Minor changes in the work may be directed by the Project Engineer with no change in contract price or time of performance. Minor changes are consistent with the intent of the Contract Documents and do not substantially alter the type of work to be performed or involve any adjustment to the contract sum or extension of the contract time.

4.2.2 ORAL ORDERS

4.2.2.1 Any oral order, direction, instruction, interpretation or determination from the Executive Director or any other person which in the opinion of the Contractor causes any change, shall be considered as a change only if the Contractor gives the Executive Director written notice of its intent to treat such oral order, direction, instruction, interpretation or determination as a change directive. Such written notice must be delivered to both the Executive Director and the Project Engineer before the Contractor acts in conformity with the oral order, direction, instruction, interpretation or determination, but not more than five (5) days after delivery of the oral order to the Contractor. The written notice shall state the date, circumstances, whether a time extension will be requested, and source of the order that the Contractor regards as a change. Such written notice may not be waived and shall be a condition precedent to the filing of any claim by the Contractor. Unless the Contractor acts in accordance with this procedure, any such oral order shall not be treated as a change for which the Contractor may make a claim for an increase in the contract time or contract price related to such work.

4.2.2.2 No more than five (5) days after receipt of the written notice from the Contractor, a Field Order shall be issued for the subject work if the HPHA agrees that it constitutes a change. If no Field Order is issued in the time established, it shall be deemed a rejection of Contractor's claim for a change. If the Contractor objects to the failure to issue a Field Order, it shall file a written protest with the Executive Director within thirty (30) days after delivery to the Executive Director of the Contractor's written notice of its intention to treat the oral order as a change. In all cases, the Contractor shall proceed with the work. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS.

4.2.3 FIELD ORDERS - All changes will be set forth in a field order or change order. Upon receipt of a field order, the Contractor shall proceed with the changes as ordered. If the Contractor does not agree with any of the terms or conditions or in the adjustment or non-adjustment to the contract time and/or contract price set forth therein, it shall file with the Executive Director a written protest setting forth its reasons in detail within thirty (30) days after receipt of the field order. In all cases, the Contractor shall proceed with the work as changed. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS. Failure to file such a protest within the time specified shall constitute agreement on the part of the Contractor with the terms, conditions, amounts and adjustments or non-adjustment to the contract price and/or contract time set forth in the field order.

4.2.4 CHANGE ORDERS

4.2.4.1 The HPHA will issue sequentially numbered change orders at times it deems appropriate during the contract period. A change order may contain the adjustment in contract price and / or time for a number of Field Orders. The change order will be issued in the format attached (refer to the Appendix). No payment for any change will be made until the change order is issued.

4.2.4.2 The penal sum of the Surety Performance and Payment Bonds will be adjusted by the amount of each and every change order.

4.3 DUTY OF CONTRACTOR TO PROVIDE PROPOSAL FOR CHANGES

4.3.1 A Field Order may request the Contractor to supply the HPHA with a proposal for an adjustment to the contract time or contract price for the work described therein. Any such request for a proposal shall not affect the duty of the Contractor to proceed as ordered with the work described in the Field Order.

4.3.2 The Project Engineer from time to time may issue a Bulletin to the Contractor requesting price and / or time adjustment proposals for contemplated changes in the work. A Bulletin is not a directive for the Contractor to perform the work described therein.

4.3.3 Within seven (7) days after receipt of a Bulletin or Field Order containing a request for proposal, the Contractor shall submit to the Project Engineer a detailed written statement in a format similar to the one shown in the Appendix setting forth all charges the Contractor proposes for the change and the proposed adjustment of the contract time, all properly itemized and supported by sufficient substantiating data to permit evaluation. No time extension will be granted for delays caused by late Contractor pricing of changes or proposed changes. If the project is delayed because Contractor failed to submit the cost proposal within the seven (7) days, or longer as allowed by the Project Engineer, liquidated damages will be assessed in accordance with Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.

4.3.4 No payment shall be allowed to the Contractor for pricing or negotiating proposed or actual changes. No time extension will be granted for delay caused by late Contractor pricing of changes or proposed changes.

4.3.5 The Executive Director may accept the entire proposal, or any discreet cost item contained within the proposal or the proposed adjustment to contract time by a notice in writing to the Contractor delivered to the Contractor within thirty (30) days after receipt of the proposal. The written acceptance by the Executive Director of all or part of the Contractor's proposal shall create a binding agreement between the parties for that aspect of the change.

4.3.6 If the HPHA refuses to accept the Contractor's entire proposal, the ~~Executive~~ Director may issue a Field Order for the work; or if a Field Order has already been issued, the HPHA may issue a supplemental Field Order establishing the remaining adjustments to contract price and/or contract time for the ordered changes. If the Contractor disagrees with any term, condition or adjustment contained in such Field Order or supplemental Field Order, it shall follow the protest procedures set forth in and be subject to the other terms of Subsection 4.2.3, FIELD ORDERS.

4.4 PRICE ADJUSTMENT (§3-125-13 HAR)

4.4.1 Any adjustment in the contract price pursuant to a change or claim in this contract shall be made in one or more of the following ways:

4.4.1.1 By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;

4.4.1.2 By unit prices specified in the contract or subsequently agreed upon;

4.4.1.3 Whenever there is a variation in quantity for any work covered by any line item in the schedule of costs submitted as required by Section 7.2, COMMENCEMENT REQUIREMENTS, by the HPHA at its discretion, adjusting the lump sum price proportionately;

4.4.1.4 In such other manner as the parties may mutually agree;

4.4.1.5 At the sole option of the Project Engineer, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as specified in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT and the force account provision of Section 8.3, PAYMENT FOR ADDITIONAL WORK; or

4.4.1.6 In the absence of an agreement between the two parties, by a unilateral determination by the HPHA of the reasonable and necessary costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as computed in accordance with applicable Sections of Chapters 3-123 and 3-126 of the Hawaii Administrative Rules and Regulations, and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

4.5 ALLOWANCES FOR OVERHEAD AND PROFIT (§3-125-13 HAR)

4.5.1 In determining the cost or credit to the HPHA resulting from a change, the allowances for all overhead, including, extended overhead resulting from adjustments to contract time (including home office, branch office and field overhead, and related delay impact costs) and profit combined, shall not exceed the percentages set forth below:

4.5.1.1 For the Contractor, for any work performed by its own labor forces, fifteen percent (15%) of the direct cost;

4.5.1.2 For each subcontractor involved, for any work performed by its own forces, fifteen percent (15%) of the direct cost;

4.5.1.3 For the Contractor or any subcontractor, for work performed by their subcontractors, seven percent (7%) of the amount due the performing subcontractor.

4.5.1.4 Field overhead includes, but is not limited to all costs of supervision, engineering, clerical, layout, temporary facilities, improvements and structures, all general condition expenditures, storage, transport and travel, housing, small tools (as defined in 8.3.4.5(h)), pickup trucks and automobiles.

4.5.2 Not more than three markup allowance line item additions not exceeding the maximum percentage shown above will be allowed for profit and overhead, regardless of the number of tier subcontractors.

4.5.3 The allowance percentages will be applied to all credits and to the net increase of direct costs where work is added and deleted by the changes.

4.6 PAYMENT FOR DELETED MATERIAL

4.6.1 CANCELED ORDERS - If acceptable material was ordered by the Contractor for any item deleted by an ordered change in the work prior to the date of notification of such deletion by the Project Engineer, the Contractor shall use its best efforts to cancel the order. The HPHA shall pay reasonable cancellation charges required by the supplier excluding any markup for overhead and profit to the Contractor.

4.6.2 RETURNED MATERIALS - If acceptable deleted material is in the possession of the Contractor or is ultimately received by the Contractor, if such material is returnable to the supplier and the Project Engineer so directs, the material shall be returned and the Contractor will be paid for the reasonable charges made by the supplier for the return of the material, excluding any markup for overhead and profit to the Contractor. The cost to the Contractor for handling the returned material will be paid for as provided in Section 4.4, PRICE ADJUSTMENT.

4.6.3 UNCANCELLED MATERIALS - If orders for acceptable deleted material cannot be canceled at a reasonable cost, it will be paid for at the actual cost to the Contractor including an appropriate markup for overhead and profit as set forth in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. In such case, the material paid for shall become the property of the HPHA and the cost of further storage and handling shall be paid for as provided in Section 4.4, PRICE ADJUSTMENT.

4.7 VARIATIONS IN ESTIMATED QUANTITIES (\$3-125-10 HAR)

4.7.1 Where the quantity of a major unit price item in this contract is estimated on the proposal form and where the actual quantity of such pay item varies more than fifteen percent (15%) above or below the estimated quantity stated in this contract, an adjustment in the contract price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above one hundred fifteen percent (115%) or below eighty-five percent (85%) of the estimated quantity. The adjustment shall be subject to Section 4.4 PRICE ADJUSTMENT and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. If the quantity variation is such as to cause an increase in the time necessary for completion, the Executive Director shall, upon receipt of a written request for an extension of time within thirty (30) days of the item's completion, ascertain the facts and make such adjustment to the completion date as the Executive Director finds justified.

4.8 VARIATIONS IN BOTTOM ELEVATIONS - The Contractor shall plan and construct to the bottom elevations of footings, piles, drilled shafts, or cofferdams as shown on the drawings. When the bottom of a footing, pile, drilled shaft, or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the drawings or direction of the Project

Engineer. In the event the bottom elevation is lowered, the Contractor shall be entitled to additional payment in accordance with Sections 4.4 PRICE ADJUSTMENT and 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. In the event the bottom elevation is raised, the HPHA shall be entitled to a credit in accordance with Sections 4.2 CHANGES, 4.4, PRICE ADJUSTMENT and 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

4.9 DIFFERING SITE CONDITIONS (§3-125-11 HAR)

4.9.1 During the progress of the work, if the Contractor encounters conditions at the site differing materially from those shown in the drawings and specifications, Contractor shall promptly, and before any such conditions are disturbed or damaged (except in an emergency as required by Subsection 7.17.8. EMERGENCIES), notify the Project Engineer in writing of:

4.9.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the contract; or

4.9.1.2 Unknown physical conditions at the site, of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract. Unclaimed motor vehicles or parts thereof and discarded materials or unclaimed items are not unknown or unforeseen physical conditions. (See also Section 5.8, EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE)

4.9.2 After receipt of written notice, the Executive Director shall promptly investigate the site, and if it is found that such conditions do materially differ and cause an increase in the Contractor's cost of, or the time required to, perform any part of the Work, whether or not changed as a result of such conditions, an adjustment shall be made and the contract modified accordingly. Any adjustment in contract price made pursuant to this Section 4.9. DIFFERING SITE CONDITIONS (§3-125-11 HAR) shall be determined in accordance with Sections 4.4, PRICE ADJUSTMENT and 7.25, DISPUTES AND CLAIMS.

4.9.3 Nothing contained in this Section 4.9, DIFFERING SITE CONDITONS shall be grounds for an adjustment in compensation if the Contractor had actual knowledge or should have known of the existence of such conditions prior to the submission of bids.

4.10 COSTS AND EXPENSES - Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to Chapter 3-123 (Cost Principles) of the Procurement Rules and the following guidelines:

4.10.1 Reimbursement for air transportation shall be actual cost or coach class air fare, whichever is less.

4.10.2 Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.

4.10.3 Unless prior written approval of the EXECUTIVE DIRECTOR is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for interisland or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

END OF ARTICLE 4

ARTICLE 5 - CONTROL OF WORK

5.1 AUTHORITY OF THE EXECUTIVE DIRECTOR - The Executive Director shall make final and conclusive decisions on all questions which may arise relating to the quality and acceptability of the materials furnished and work performed, the manner of performance and the rate of progress of the work, the interpretation of the plans and specifications, the acceptable fulfillment of the contract on the part of the Contractor, the compensation under the contract and the mutual rights of the parties to the contract. The Executive Director shall have the authority to enforce and make effective such decisions and orders at the Contractor's expense when the Contractor fails to carry such decisions and orders out promptly and diligently. The Executive Director shall have the authority to suspend the work wholly or in part as provided in Section 7.24, SUSPENSION OF WORK.

5.2 AUTHORITY OF THE PROJECT ENGINEER - The Project Engineer has the authority to act on behalf of the HPHA on all matters regarding the contract and the work that are not reserved for the Executive Director. The Project Engineer's authority is vested exclusively in the Project Engineer except when specific authority to act for the Project Engineer has been delegated to a specific person or persons. Such delegation of authority may be established by the Contract Documents; otherwise, it is not effective or binding upon the HPHA until such written notification of the delegation is received by the Contractor.

5.3 AUTHORITY OF THE INSPECTOR

5.3.1 The Inspector shall observe and inspect the contract performance and materials. The Inspector does not have any authority vested in the Project Engineer unless specifically delegated in writing.

5.3.2 The Inspector may offer advice and recommendations to the Contractor, but any such advice or recommendations are not directives from the Project Engineer.

5.3.3 The Inspector has no authority to allow deviations from the Contract Documents and may reject any and all work that the Inspector deems is not in conformity with the contract requirements. Failure of an Inspector at any time to reject non-conforming work shall not be considered a waiver of the HPHA's right to require work in strict conformity with the Contract Documents as a condition of final acceptance.

5.4 AUTHORITY OF CONSULTANT(S) - The HPHA may engage Consultant(s) for limited or full observation to supplement the inspections performed by the HPHA and respective Counties. Unless otherwise specified in writing to the Contractor, such retained Consultant(s) will have the authority of an Inspector.

5.5 SHOP DRAWINGS AND OTHER SUBMITTALS - The following documents shall be submitted where required by the Contract Documents:

5.5.1 SHOP DRAWING

(a) The Contractor shall prepare, thoroughly check, and approve all shop drawings, including those prepared by subcontractors or any other persons. The Contractor shall indicate its approval by stamping and signing each drawing. Any shop drawing submitted without being reviewed, stamped and signed will be considered as not having been submitted, and any delay caused thereby shall be the Contractor's responsibility.

(b) Shop drawings shall indicate in detail all parts of an item of work, including erection and setting instructions and engagements with work of other trades or other

separate contractors. Shop drawings for structural steel, millwork and pre-cast concrete shall consist of calculations, fabrication details, erection drawings and other working drawings to show the details, dimensions, sizes of members, anchor bolt plans, insert locations and other information for the complete fabrication and erection of the structure to be constructed.

(c) The Contractor shall be responsible for the design of all structural curtain walls, all connections and fasteners for structural steel and architectural and structural precast concrete. Curtain walls, connections and fasteners shall be designed by a licensed professional engineer to carry the indicated or necessary loads. The precast concrete pieces shall be designed to withstand erection, transportation and final loading stresses. All calculations shall be performed by a licensed professional engineer and submitted to the Project Engineer for review.

(d) The cost of shop drawings or any other submittal shall not be a separate or individual pay item. All costs of furnishing shop drawings required by the contract shall be included in the price agreed to be paid for the various contract items of work, and no additional allowances will be made therefor.

(e) All shop drawings as required by the contract, or as determined by the Project Engineer to be necessary to illustrate details of the Work shall be submitted to the Project Engineer with such promptness as to cause no delay in the work or in that of any other Contractor. Delay caused by the failure of the Contractor to submit shop drawings on a timely basis to allow for review, possible resubmittal and acceptance will not be considered as a justifiable reason for a contract time extension. Contractor, at its own risk, may proceed with the work affected by the shop drawings before receiving acceptance; however the HPHA shall not be liable for any costs or time required for the correction of work done without the benefit of accepted shop drawings.

(f) It is the Contractor's obligation and responsibility to check all of its and its subcontractor's shop drawings and be fully responsible for them and for coordination with connecting and other related work. The Contractor shall prepare, and submit to the Project Engineer coordination drawings showing the installation locations of all plumbing, piping, duct and electrical work including equipment throughout the project. By approving and submitting shop drawings, the Contractor thereby represents that it has determined and verified all field measurements and field construction criteria, or will do so, and that it has checked and coordinated each shop drawing with the requirements of the work and the contract documents. When shop drawings are prepared and processed before field measurements and field construction criteria can be or have been determined or verified, the Contractor shall make all necessary adjustments in the work or resubmit further shop drawings, all at no change in contract price or time.

5.5.1.1 SHOP DRAWING FORM - Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and number of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:

- (1) Date of Submission
- (2) Name of Project
- (3) Project Number
- (4) Location of Project

- (5) Name of submitting Contractor and Subcontractor
- (6) Revision Number
- (7) Specification and/or any drawing reference by article or sheet number.

5.5.1.2 No shop drawing shall be smaller than 24" x 36" nor larger than 28" x 42". At the determination of the Project Engineer, each sheet of drawings for the submittal shall consist of either (1) reproducible transparency and three ozalid prints; or (2) six ozalid prints

5.5.1.3 The HPHA will not be responsible for any cost of modifying/adjusting precast structures to fit the final as-built design, actual field conditions and finished work. To this end, the Contractor shall follow the following procedures:

(a) Submit shop drawings for general design conformity for approval. Delay precasting operations.

(b) Start infrastructure work. Expose, check grade and install improvements requiring precast structures. Resubmit shop drawings with schedule for all structures indicating required deviations, correct and final inverts, depths, openings, special reinforcing and details, alignments, correct configurations, tops, grating, etc. The Contractor shall submit a schedule for the precasting work. Precast operations may commence based on approved shop drawings. During precast operations, the Project Engineer may inspect the operations at least once per differing group of structures. The Contractor shall assume all risks and costs associated with modifying/adjusting the precast structures due to incomplete field verification, premature analysis and shop drawings.

5.5.2 **DESCRIPTIVE SHEETS AND OTHER SUBMITTALS** - When a submittal is required by the contract, the Contractor shall submit to the Project Engineer eight (8) complete sets of descriptive sheets such as brochures, catalogs, illustrations, etc., which will completely describe the material, product, equipment, furniture or appliances to be used in the project as shown in the drawings and specifications. Prior to the submittal, the Contractor will review and check all descriptive sheets for conformity to the contract requirements and indicate such conformity by marking or stamping and signing each sheet. It is the responsibility of the Contractor to submit descriptive sheets for review and acceptance by the Project Engineer as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit descriptive sheets as required will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.

5.5.3 **MATERIAL SAMPLES AND COLOR SAMPLES** - Prior to their submittal, all color samples and material shall be assembled and presented as required by the HPHA. When sample submittals are required by the contract, the Contractor shall review, approve, indicate its approval and submit to the Project Engineer samples of the materials to be used in the project and color selection samples. It is the responsibility of the Contractor to submit material and color samples for review as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit material and color samples will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.

5.5.4 **SUBMITTAL VARIANCES** - The Contractor shall include with the submittal, written notification clearly identifying all deviations or variances from the contract drawings, specifications and other Contract Documents. The notice shall be in a written form separate

from the submittal. The variances shall also be clearly indicated on the shop drawing, descriptive sheet, material sample or color sample. Failure to so notify of and identify such variances shall be grounds for the subsequent rejection of the related work or materials, notwithstanding that the submittal was accepted by the Project Engineer. If the variances are not acceptable to the Project Engineer, the Contractor will be required to furnish the item as specified or indicated on the Contract Documents at no additional cost or time.

5.5.5 REVIEW AND ACCEPTANCE PROCESS - The Project Engineer shall check shop drawings and within forty-five (45) days of receipt return them to the Contractor unless otherwise agreed between the Contractor and the HPHA. Submittals required for work to be installed within the first sixty days after the notice to proceed shall be returned by the Project Engineer within twenty (20) days. If the volume of shop drawings submitted at any time for review is unusually large, the Contractor may inform the Project Engineer of its preferred order for review and the Project Engineer shall use reasonable efforts to accommodate the Contractor's priorities.

5.5.5.1 The acceptance by the Project Engineer of the Contractor's submittal relates only to their sufficiency and compliance with the intention of the contract. Acceptance by the Project Engineer of the Contractor's submittal does not relieve the Contractor of any responsibility for accuracy of dimensions, details, and proper fit, and for agreement and conformity of submittal with the Contract Drawings and Specifications. Nor will the Project Engineer's acceptance relieve the Contractor of responsibility for variance from the Contract Documents unless the Contractor, at the time of submittal, has provided notice and identification of such variances required by this section. Acceptance of a variance shall not justify a contract price or time adjustment unless the Contractor requests such an adjustment at the time of submittal and the adjustment are explicitly agreed to in writing by the HPHA. Any such request shall include price details and proposed scheduling modifications. Acceptance of a variance is subject to all contract terms, stipulations and covenants, and is without prejudice to any and all rights under the surety bond.

5.5.5.2 If the Project Engineer returns a submittal to the Contractor that has been rejected, the Contractor, so as not to delay the work, shall promptly make a resubmittal conforming to the requirements of the Contract Documents and indicating in writing on the transmittal and the subject submittal what portions of the resubmittal has been altered in order to meet the acceptance of the Project Engineer. Any other differences between the resubmittal and the prior submittal shall also be specifically described in the transmittal.

5.5.5.3 No mark or notation made by the Project Engineer or Consultant(s) on or accompanying the return of any submittal to the Contractor shall be considered a request or order for a change in work. If the Contractor believes any such mark or notation constitutes a request for a change in the work for which it is entitled to an adjustment in contract price and/or time, the Contractor must follow the same procedures established in Section 4.2, **CHANGES** for oral orders, directions, instructions, interpretations or determinations from the Project Engineer or else lose its right to claim for an adjustment.

5.6 COORDINATION OF CONTRACT DOCUMENTS - It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. The Contract Documents are complementary: any requirement occurring in one document is as binding as though occurring in all. In the event of conflict or discrepancy the priorities stated in the following Subsections shall govern:

5.6.1 Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda only to the extent specified.

5.6.2 Special Conditions and Proposal shall govern over the General Conditions and Specifications.

5.6.3 Specifications shall govern over drawings.

5.6.4 Specification Error - Should an error or conflict appear within the specification, the Contractor shall immediately notify the Project Engineer. The Project Engineer shall promptly issue instructions as to procedure. Any requirement occurring in one or more parts of the specification is as binding as though occurring in all applicable parts.

5.6.4.1 Should an error or conflict appear within a specification section, between a listed manufacturer / product and the performance requirements of the specification section, the performance requirements shall govern.

5.6.5 DRAWINGS

5.6.5.1 Schedules shall govern over all other notes and drawings.

5.6.5.2 Bottom elevations of footings shown on drawings shall govern over a general note such as: "All footings shall rest on firm, undisturbed soil and extend a minimum of a certain number of feet into natural or finish grade, whichever is lower." In the event the footing must be lowered below the bottom elevation shown, the Contractor shall be entitled to additional payment as provided in Section 4.2, CHANGES. In the event the footing is raised above the bottom elevation shown, the HPHA shall be entitled to a credit as provided in Section 4.2, CHANGES.

5.6.5.3 When a bottom of pile, drilled shaft, piling or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the plans or the direction by the Project Engineer. The Project Engineer, at the Project Engineer's sole discretion, may order in writing termination of all or part of the work above the estimated or approximate elevation.

5.6.5.4 Except for drawing schedules and bottom elevations as noted above, general notes shall govern over all other portions of the drawings:

5.6.5.5 Larger scale drawings shall govern over smaller scale drawings.

5.6.5.6 Figured or numerical dimensions shall govern over dimensions obtained by scaling. Measurements from the drawings when scaled shall be subject to the approval of the Project Engineer.

5.6.5.7 In cases of discrepancies in the figures or drawings, the discrepancies shall be immediately referred to the Project Engineer without whose decision said discrepancy shall not be corrected by the Contractor save at its own risk and in the settlement of any complications arising from such adjustment without the knowledge and consent of the Project Engineer, the Contractor shall bear all extra expense involved.

5.6.5.8 Items shown on the drawings that are completely void in terms of description, details, quality and / or performance standards in both the Drawings and Specifications to make a price determination shall be considered an omission and the Contractor shall immediately refer same to the Project Engineer for a decision.

5.6.5.9 Where there is a conflict between the architectural sheets and the civil or landscaping or electrical sheets, etc., the conflict shall be considered a discrepancy and the Contractor shall immediately refer same to the Project Engineer for a decision.

5.6.5.10 Any requirement occurring in one or more of the sheets is as binding as though occurring in all applicable sheets.

5.7 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS - The Contractor shall carefully study and compare the Contract Documents with each other, with field conditions and with the information furnished by the HPHA and shall at once report to the Project Engineer errors, conflicts, ambiguities, inconsistencies or omissions discovered. Should an item not be sufficiently detailed or explained in the Contract Documents, Contractor shall report and request the Project Engineer's clarification and interpretation. The Project Engineer will issue a final clarification or final interpretation.

5.8 EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE

5.8.1 The Contractor shall examine carefully the Project Site to become familiar with the conditions to be encountered in performing the Work and the requirements of the Contract Documents.

5.8.1.1 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge of the requirements of the Work to be accomplished or the conditions to be encountered in performing the project.

5.8.1.2 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge when the existence of differing site, subsurface or physical conditions could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the bidding requirements or contract documents to be conducted by or for the Contractor.

5.8.2 When the contract drawings include a log of test borings showing a record of the data obtained by the HPHA's investigation of subsurface conditions, said log represents only the opinion of the HPHA as to the character of material encountered in its test borings and at only the location of each boring. The Contractor acknowledges that underground site conditions in Hawaii vary widely. There is no warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that other conditions may not occur.

5.8.3 Reference is made to the Special Conditions for identification of subsurface investigations, reports, explorations and tests utilized by the HPHA in preparation the Contract Documents. Such reports, drawings, boring logs etc., if any, are not part of the Contract Documents.

5.9 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT

5.9.1 FURNISHING DRAWINGS AND SPECIFICATIONS - Contractor will be supplied copies of the Contract Drawings and Specifications as specified in the General Requirements. Contractor shall have and maintain at least one unmarked copy of the Contract Drawings and Specifications on the work site, at all times. Contractor shall cooperate with the Project Engineer, the Inspector(s), and other contractors in every possible way.

5.9.2 SUPERINTENDENT - The Contractor shall have a competent superintendent on the work site as its designated agent. The superintendent shall be able to read and understand the project plans and specifications and shall be experienced in the type of project being undertaken and the work being performed. The superintendent shall receive instructions from the Project Engineer or its authorized representative. The Contractor shall authorize the superintendent to (a) execute the orders and directions of the Project Engineer or its authorized representative without delay and (b) promptly supply such materials, equipment, tools, labor and incidentals as may be required to complete the project within the prescribed contract time. The Contractor shall furnish a superintendent regardless of the amount of project work sublet.

5.9.2.1 If the superintendent or agent is not present at the work site, the Project Engineer shall have the right to suspend the work as described under Section 7.24, SUSPENSION OF WORK.

5.9.2.2 The Contractor shall file with the Project Engineer a written statement giving the name of the superintendent or agent assigned to the project. The Contractor shall be responsible for notifying the Project Engineer in writing of any change in the superintendent or agent.

5.9.2.3 The requirements of this Subsection 5.9.2, SUPERINTENDENT may be waived by the Project Engineer.

5.9.3 ENGINEERING WORK - The Contractor shall properly and accurately lay out the work, perform all engineering work, and furnish all engineering materials and equipment required to establish and maintain all lines, grades, dimensions and elevations called for in the drawings or required in the progress of construction, unless otherwise noted in the contract documents. The Contractor will be held definitely and absolutely responsible for any errors in lines, grades, dimensions and elevations and shall at once, on instruction from the Project Engineer, correct and make good such errors or any errors, or faults in the work resulting from errors in engineering performed under the requirements of its contract to the entire satisfaction of the Project Engineer. Full compensation for the work shall be included in the prices paid for contract items of work. No additional allowance will be made for the correction of incorrect engineering work.

5.9.3.1 The Project Engineer shall furnish the requisite bench elevations.

5.9.3.2 The Contractor shall locate and verify all lines, grades, dimensions and elevations indicated on the drawings before any excavation, or construction begins. Any discrepancy shall be immediately brought to the attention of the Project Engineer; any change shall be made in accordance with the Project Engineer's instruction.

5.9.3.3 The Contractor shall verify all street survey monuments (horizontal and vertical alignment) prior to final acceptance by the Project Engineer in accordance with any governmental requirements.

5.9.3.4 The Contractor shall provide a surveyor or Civil Engineer licensed in the State of Hawaii to verify and establish all lines, grades, dimensions and elevations.

5.9.4 USE OF STRUCTURE OR IMPROVEMENT - The HPHA shall have the right, at any time during construction of the structure or improvements, to enter same for the purpose of installing by government labor or by any other Contractor or utility any necessary work in connection with the installation of facilities, it being mutually understood and agreed, however, that the Contractors, utilities and the HPHA will, so far as possible work to the mutual advantage of all, where their several works in the above mentioned or in unforeseen

instances touch upon or interfere with each other. As a convenience to those involved, the Project Engineer shall allocate the work and designate the sequence of construction in case of controversy between Contractors on separate projects under HPHA jurisdiction.

5.9.4.1 The HPHA shall also have the right to use the structure, equipment, improvement or any part thereof, at any time after it is considered by the Project Engineer as available. In the event that the structure, equipment or any part thereof is so used, the HPHA shall be responsible for all expenses incidental to such use and any damages resulting from the HPHA's use.

5.9.4.2 Equipment warranty will commence to run before the work is complete when and if the HPHA begins actual use of the equipment for the purpose for which the equipment was designed and installed.

5.9.4.3 If the HPHA enters the structure for construction and/or occupancy and the Contractor is delayed because of interference by the HPHA or by extra work resulting from damage which the Contractor is not responsible for, or by extraordinary measures the Contractor must take to accommodate the HPHA, the Contractor shall be granted an extension of time in accordance with Section 7.21, CONTRACT TIME. However, if such use increases the cost or delays the completion of the remaining portions of work, the Contractor shall be entitled to such extra compensation or extension of time or both, as the HPHA may determine to be proper. Any additional work necessary will be paid in accordance with Section 8.3, PAYMENT FOR ADDITIONAL WORK.

5.10 INSPECTION - The Project Engineer, the HPHA's consultants, Inspectors employed by the HPHA and other representatives duly authorized by the HPHA shall at all times have access to the work during its construction and shall be furnished with every reasonable facility for ascertaining at any time that the materials and the workmanship are in accordance with the requirements and intentions of the contract. All work done and all materials furnished shall be subject to inspection and acceptance.

5.10.1 Such inspection and approval may extend to all or part of the Work, and to the preparation, fabrication or manufacture of the materials to be used. By entering into a contract for the supply of materials, equipment or performance of labor in connection with the Work, such Material and Equipment Supplier or Labor Contractor consents to and is subject to the terms of Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE HPHA to the same extent as the Contractor.

5.10.2 AUTHORITY TO SUSPEND OPERATIONS - The Project Engineer shall have the authority to suspend operations of any work being improperly performed by issuing a written order giving the reason for shutting down the work. Should the Contractor disregard such written order, the work done thereafter will not be accepted nor paid for.

5.10.3 The inspection of the work shall not relieve the Contractor of any of its obligations to fulfill the contract as prescribed. Notwithstanding prior payment and acceptance by the Project Engineer, any defective and nonconforming work shall be corrected to comply with the contract requirements. Unsuitable, unspecified or unapproved materials may be rejected.

5.10.4 FEDERAL AGENCY INSPECTION - Projects financed in whole or in part with Federal funds shall be subject to inspection and corrective requirements at all times by the Federal Agency involved at no cost to the HPHA.

5.11 REMOVAL OF DEFECTIVE, NON-CONFORMING AND UNAUTHORIZED WORK

5.11.1 All work which has been rejected as not conforming to the requirements of the Contract shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation will be allowed for such removal or replacement. Any work done beyond the work limits shown on the drawings and specifications or established by the Project Engineer or any additional work done without written authority will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor's expense.

5.11.2 SCHEDULING CORRECTIVE WORK - The Contractor shall perform its corrective or remedial work at the convenience of the HPHA and shall obtain the Project Engineer's approval of its schedule.

5.11.3 FAILURE TO CORRECT WORK - Upon failure on the part of the Contractor to comply promptly with any order of the Project Engineer made under the provisions of Section 5.10, the Project Engineer shall have authority to cause defective work to be remedied or removed and replaced, and unauthorized work to be removed, at the Contractor's expense, and to deduct the costs from any monies due or to become due the Contractor.

5.12 VALUE ENGINEERING INCENTIVE (\$3-132 HAR amended by Act 149 SLH 1999) - On projects with contract amounts in excess of \$250,000 (two hundred fifty thousand dollars), the following Value Engineering Incentive Clause shall apply to allow the Contractor to share in cost savings that ensue from cost reduction proposals it submits.

5.12.1 The Value Engineering Incentive Clause applies to all Value Engineering Change Proposals (cost reduction proposals, hereinafter referred to as (VECP) initiated and developed by the Contractor for changing the drawings, designs, specifications or other requirements of this contract. This clause does not however, apply to any VECP unless it is identified as such by the Contractor at the time of its submission to the Project Engineer.

5.12.2 VALUE ENGINEERING CHANGE PROPOSAL (VECP) – All VECP must:

5.12.2.1 Result in a savings to the HPHA of at least \$4000 (four thousand dollars) by providing less costly items and without impairing any essential functions and characteristics such as service life, reliability, economy of operation, ease of maintenance and all necessary features of the completed work;

5.12.2.2 Require, in order to be applied to this Contract, a change order to this Contract; and

5.12.2.3 Not adversely impact on the schedule of performance or the Contract completion date.

5.12.3 VECP REQUIRED INFORMATION - The VECP will be processed expeditiously and in the same manner as prescribed for any other change order proposal. As a minimum, the following information will be submitted by the Contractor with each proposal:

5.12.3.1 A description of the difference between the existing contract requirements and the VECP, and the comparative advantages and disadvantages of each including durability, service life, reliability, economy of operation, ease of maintenance, design safety standards, desired appearance, impacts due to construction and other essential or desirable functions and characteristics as appropriate;

5.12.3.2 An itemization of the requirements of the contract which must be changed if the VECP is adopted and a recommendation as to how to make each such change;

5.12.3.3 An estimate of the reduction in performance costs that will result from adoption of the VECP taking into account the costs of implementation by the Contractor, including any amounts attributable to subcontracts, and the basis for the estimate;

5.12.3.4 A prediction of any effects the VECP would have on other costs to the HPHA, such as HPHA furnished property costs, costs of related items, and costs of maintenance and operation over the anticipated life of the material, equipment, or facilities as appropriate; the construction schedule, sequence and time; and bid item totals used for evaluation and payment purposes;

5.12.3.5 A statement of the time by which a change order adopting the VECP must be issued so as to obtain the maximum cost reduction during the remainder of this contract noting any effect on the contract time; and

5.12.3.6 The dates of any previous submissions of the VECP, the numbers of any Government contracts under which submitted and the previous actions by the Government, if known.

5.12.4 REQUIRED USE OF LICENSED ARCHITECT OR ENGINEER - When, in the judgment of the Project Engineer, a VECP alters the design prepared by a registered professional architect or engineer, the Contractor shall ensure the changes to be prepared are by or under the supervision of a licensed professional architect or engineer, and stamped and so certified.

5.12.5 Unless and until a change order applies a VECP to a contract, the Contractor shall remain obligated to perform in accordance with the terms of the contract and the HPHA shall not be liable for delays incurred by the Contractor resulting from the time required for the HPHA's determination of the acceptability of the VECP.

5.12.5.1 The determination of the Project Engineer as to the acceptance of any VECP under a contract shall be final.

5.12.6 ACCEPTANCE OF VECP - The Project Engineer may accept in whole or in part any VECP submitted pursuant to this section by issuing a change order to the Contract. Prior to issuance of the change order, the Contractor shall submit complete final contract documents similar to those of the original Contract showing the accepted changes and the new design and features as well as the following:

5.12.6.1 Design calculations;

5.12.6.2 The design criteria used; and

5.12.6.3 A detailed breakdown of costs and expenses to construct or implement such revisions.

5.12.6.4 The change order will identify the final VECP on which it is based.

5.12.7 VECP PRICE ADJUSTMENTS - When a VECP is accepted under a contract, an adjustment in the contract price shall be made in accordance with Section 4.4, PRICE ADJUSTMENT. The adjustment shall first be established by determining the effect on the Contractor's cost of implementing the change, including any amount attributable to subcontractors and to the HPHA's charges to the Contractor for architectural, engineering,

or other consultant services, and the staff time required to examine and review the proposal. The contract price shall then be reduced by fifty percent (50%) of the net estimated decrease in the cost of performance.

5.12.8 The Contractor may restrict the HPHA's right to use the data or information or both, on any sheet of a VECP or of the supporting data, submitted pursuant to this Subsection, if it is stated on that sheet as follows:

5.12.8.1 "This data or information or both shall not be disclosed outside the HPHA or be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this VECP. This restriction shall not limit the HPHA's right to use this data or information or both if obtained from another source, or is otherwise available, without limitations. If this VECP is accepted by the HPHA by issuance of a change order after the use of this data or information or both in such an evaluation, the HPHA shall have the right to duplicate, use and disclose any data or information or both pertinent to the proposal as accepted in any manner and for any purpose whatsoever and have others so do."

5.12.9 In the event of acceptance of a VECP, the HPHA shall have all rights to use, duplicate or disclose in whole or in part in any manner and for any purpose whatsoever, and to have or permit others to do so, any data or information or both reasonably necessary to fully utilize such proposal.

5.12.10 The Contractor shall submit with each VECP all required information and provide all additional information as may be required by the Project Engineer to evaluate and implement the VECP. The cost for preparing the VECP shall be the Contractor's responsibility, and any part of the Contractor's cost for implementing the change shall be due only when the proposal is accepted and a change order is issued.

5.12.11 If the service of the HPHA's architect, Project Engineer or consultant is necessary to review and evaluate a VECP, the cost therefor shall be paid for by the Contractor.

5.12.12 Each VECP shall be evaluated as applicable to this contract, and past acceptance on another HPHA project for a similar item shall not be automatic grounds for approval.

5.12.13 The method by which the Contractor will share a portion of the cost savings from an accepted VECP shall be for this contract only, and no consideration shall be made for future acquisition, royalty type payment or collateral savings.

5.12.13.1 The HPHA may accept the proposed VECP in whole or in part. The Executive Director shall issue a contract change order to identify and describe the accepted VECP.

5.13 SUBCONTRACTS - Nothing contained in the contract documents shall create a contractual relationship between the HPHA and any subcontractor.

5.13.1 SUBSTITUTING SUBCONTRACTORS - Contractors may enter into subcontracts only with subcontractors listed in the proposal. No subcontractor may be added or deleted and substitutions will be allowed only if the subcontractor:

5.13.1.1 Fails, refuses or is unable to enter into a subcontract; or

5.13.1.2 Becomes insolvent; or

- 5.13.1.3 Has its subcontractor's license suspended or revoked; or
- 5.13.1.4 Has defaulted or has otherwise breached the subcontract in connection with the subcontracted work; or
- 5.13.1.5 Is unable to comply with other requirements of law applicable to contractors, subcontractors and public works projects.

5.13.2 Requesting Approval to Substitute a Subcontractor - Requests to substitute a subcontractor shall be submitted to the Project Engineer for approval. Contractor agrees to hold the HPHA harmless and indemnify the HPHA for all claims, liabilities, or damages whatsoever, including attorney's fees arising out of or related to the approval or disapproval of the substitution.

5.13.3 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and the other contract documents insofar as applicable to the work of the subcontractor and to give the Contractor the same rights regarding the termination of a subcontractor as the HPHA may exercise over the Contractor.

5.13.4 The Contractor shall not sponsor any unliquidated subcontractor's claim against the HPHA and shall defend, indemnify and hold the HPHA harmless against any direct claims by its subcontractors. Any claim for additional compensation by a subcontractor in connection with the work shall be made only against the Contractor. The Contractor may not assert any such claim against the HPHA until the liability of the Contractor has been unconditionally established by negotiation, arbitration or litigation, and the amount due the subcontractor has been determined, save for interest due.

5.13.5 Once a subcontractor's claim is established, should the Contractor intend to make the claim against the HPHA, it shall follow the procedure set forth under Section 7.25, DISPUTES AND CLAIMS.

5.13.6 SUBCONTRACTING - Contractor shall perform with its own organization, work amounting to not less than twenty percent (20%) of the total contract cost, exclusive of costs for materials and equipment the Contractor purchases for installation by its subcontractors, except that any items designated by the HPHA in the contract as "specialty items" may be performed by a subcontractor and the cost of any such specialty items so performed by the subcontractor may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization.

END OF ARTICLE 5

ARTICLE 6 - CONTROL OF MATERIALS AND EQUIPMENT

6.1 MATERIALS AND EQUIPMENT - Contractor shall furnish, pay for and install all material and equipment as called for in the drawings and specifications. Materials and equipment shall be new and the most suitable for the purpose intended unless otherwise specified. The HPHA does not guarantee that the specified or pre-qualified product listed in the drawings and specifications are available at the time of bid or during the contract period.

6.2 SOURCE OF SUPPLY AND QUALITY OF MATERIALS

6.2.1 Only materials conforming to the drawings and specifications and, when required by the contract have been accepted by the Project Engineer, shall be used. In order to expedite the inspection and testing of materials, at the request of the Project Engineer, the Contractor shall identify its proposed sources of materials within ten (10) days after notification by the Project Engineer.

6.2.2 At the option of the Project Engineer, the materials may be accepted by the Project Engineer at the source of supply before delivery is started. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer for examination and tested in accordance with the methods referred to under samples and tests.

6.2.3 PROJECT ENGINEER'S AUTHORIZATION TO TEST MATERIALS - Materials proposed to be used may be inspected and tested whenever the Project Engineer deems necessary to determine conformance to the specified requirements. The cost of testing shall be borne by the Contractor. However, should test results show that the material(s) is in compliance with the specified requirements; the cost of the testing will be borne by the HPHA.

6.2.4 UNACCEPTABLE MATERIALS - In the event material(s) are found to be unacceptable, the Contractor shall cease their use, remove the unacceptable material(s) that have already been installed or applied, and furnish acceptable materials all at no additional cost to the HPHA. No material which is in any way unfit for use shall be used.

6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING

6.3.1 SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING - Refer to Section 2.7, SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING. For materials and equipment submitted in compliance with Section 2.7, SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING if after installing the substituted product, an unlisted variance is discovered the Contractor shall immediately replace the product with a specified product at no cost to the HPHA.

6.3.2 SUBSTITUTION AFTER CONTRACT AWARD - Subject to the Project Engineer's determination if the material or equipment is equal to the one specified or prequalified, substitution of material or equipment may be allowed after the Letter of Award is issued only:

6.3.2.1 If the specified or prequalified item is delayed by unforeseeable contingencies beyond the control of the Contractor which would cause a delay in the project completion; or

6.3.2.2 If any specified or prequalified item is found to be unusable or unavailable due to a change by the manufacturer or other circumstances; or

6.3.2.3 If the Contractor desires to provide a more recently developed material, equipment, or manufactured model from the same named manufacturer than the one specified or prequalified; or

6.3.2.4 If the specified material and / or equipment inadvertently lists only a single manufacturer.

6.3.3 A substitution request after the Contract is awarded shall be fully explained in writing. Contractor shall provide brochures showing that the substitute material and / or equipment is equal or better in essential features and also provide a matrix showing comparison of the essential features. Contractor shall justify its request and include quantities and unit prices involved, respective supplier's price quotations and such other documents necessary to fully support the request. Any savings in cost will be credited to the HPHA. Contractor shall absorb any additional cost for the substitute item(s) or for its installation. Submitting a substitution request, does not imply that substitutions, for brand name specified materials and equipment will be allowed. The Project Engineer may reject and deny any request deemed irregular or not in the best interest of the HPHA. A request for substitution shall not in any way be grounds for an extension of contract time. At the discretion of the Project Engineer, a time extension may be granted for an approved substitution.

6.4 ASBESTOS CONTAINING MATERIALS - The use of materials or equipment containing asbestos is prohibited under this contract. Contractor warrants that all materials and equipment incorporated in the project are asbestos-free.

6.5 TEST SAMPLES

6.5.1 The Project Engineer may require any or all materials to be tested by means of samples or otherwise. Contractor shall collect and forward samples requested by the Project Engineer. Contractor shall not use or incorporate any material represented by the samples until all required tests have been made and the material has been accepted. In all cases, the Contractor shall furnish the required samples without charge. Where samples are required from the completed work, the Contractor shall cut and furnish samples from the completed work. Samples so removed shall be replaced with identical material and refinished. No additional compensation will be allowed for furnishing test samples and their replacement with new materials.

6.5.2 Tests of the material samples will be made in accordance with the latest standards of the American Society for Testing and Materials (ASTM), as amended prior to the contract date unless otherwise provided. In cases where a particular test method is necessary or specifications and serial numbers are stipulated, the test shall be made by the method stated in the above-mentioned publication. Where the test reference is the American Association of State Highway and Transportation Officials (AASHTO), it means the specifications and serial numbers of the latest edition and amendments prior to the bid date.

6.5.3 The Project Engineer may, at no extra cost to the HPHA retest any materials which have been tested and accepted at the source of supply after the same has been delivered to the work site. The Project Engineer shall reject all materials which, when retested, do not meet the requirements of the Contract.

6.6 MATERIAL SAMPLES

6.6.1 The Contractor shall furnish all samples required by the drawings and specifications or that may be requested by the Project Engineer of any and all materials or

equipment it proposes to use. Unless specifically required, samples are not to be submitted with the bid.

6.6.2 No materials or equipment of which samples are required shall be used on the Work until the Project Engineer has received and accepted the samples. If the Contractor proceeds to use such materials before the Project Engineer accepts the samples, the Contractor shall bear the risk.

6.6.3 Contractor shall furnish two (2) copies of a transmittal letter with each shipment of samples. The letter shall provide a list of the samples, the name of the building or work for which the materials are intended and the brands of the materials and names of the manufacturers. Also, each sample submitted shall have a label indicating the material represented, its place of origin, the names of the producer, the Contractor and the building or work for which the material is intended. Samples of finished materials shall be marked to indicate where the materials represented are required by the drawings or specifications.

6.6.4 Acceptance of any sample(s) shall be only for the characteristics or for the uses named in such acceptance and for no other purpose. Acceptance of samples shall not change or modify any contract requirement. All samples will be provided by the Contractor at no extra cost to the HPHA. See also Section 5.5, SHOP DRAWINGS AND OTHER SUBMITTALS.

6.7 NON-CONFORMING MATERIALS - All materials not conforming to the requirements of this contract documents, whether in place or not, shall be rejected and removed immediately from the site of work unless otherwise permitted by the Project Engineer in writing. No rejected material which has subsequently been made to conform shall be used unless and until written acceptance has been given by the Project Engineer. If the Contractor fails to comply forthwith with any order of the Project Engineer made under the provisions of this Section 6.7, NON-CONFORMING MATERIALS the Project Engineer shall have the authority to remove and replace non-conforming materials and charge the cost of removal and replacement to the Contractor.

6.8 HANDLING MATERIALS - Contractor shall handle all materials to preserve their quality and fitness for work. Transport aggregates from the source or storage site to the work in tight vehicles to prevent loss or segregation of materials after loading and measuring.

6.9 STORAGE OF MATERIALS - Contractor shall store all materials to preserve their quality and fitness for the work. Unless otherwise provided, any portion of the project site within the Project Contract Limit not required for public travel may be used for storage purposes and for the Contractor's plant and equipment. Any additional space required shall be provided by the Contractor at its expense subject to the Project Engineer's acceptance. Contractor shall store materials on wooden platforms or other hard, clean surfaces and covered to protect it from the weather and damage. Stored materials shall be located to allow prompt inspection.

6.10 PROPERTY RIGHTS IN MATERIALS - Nothing in the contract shall be construed to vest in the Contractor any right to any materials and equipment after such materials and equipment have been attached, affixed to, or placed in the work.

6.11 ANTITRUST CLAIMS - The STATE and the CONTRACTOR recognized that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and material purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price

is established under this Contract and which are not passed on to the STATE under an escalation clause.

END OF SECTION 6

ARTICLE 7 - PROSECUTION AND PROGRESS
(Including Legal Relations and Responsibility)

7.1 PROSECUTION OF THE WORK

7.1.1 After approval of the Contract by the Executive Director, a Notice to Proceed will be given to the Contractor as described in Section 3.10, NOTICE TO PROCEED. The Notice to Proceed will indicate the date the Contractor is expected to begin the construction and from which date contract time will be charged.

7.1.2 The Contractor shall begin work no later than ten (10) working days from the date in the Notice to Proceed and shall diligently prosecute the same to completion within the contract time allowed. The Contractor shall notify the Project Engineer at least three (3) working days before beginning work.

7.1.3 If any subsequent suspension and resumption of work occurs, the Contractor shall notify the Project Engineer at least twenty-four (24) hours before stopping or restarting actual field operations.

7.1.4 **WORKING PRIOR TO NOTICE TO PROCEED** - The Contractor shall not begin work before the date in the Notice to Proceed. Should the Contractor begin work before receiving the Notice to Proceed, any work performed in advance of the specified date will be considered as having been done at the Contractor's risk and as a volunteer and subject to the following conditions:

7.1.4.1 Under no circumstances shall the Contractor commence work on site until it has notified the Project Engineer of its intentions and has been advised by the Project Engineer in writing that the project site is available to the Contractor. The project site will not be made available until the Contractor has complied with commencement requirements under Section 7.2, COMMENCEMENT REQUIREMENTS.

7.1.4.2 In the event the contract is not executed, the Contractor shall, at its own expense, do such work as is necessary to leave the site in a neat condition to the satisfaction of the Project Engineer. The Contractor shall not be reimbursed for any work performed.

7.1.4.3 All work done prior to the Notice to Proceed shall be performed in accordance with the Contract Documents, but will only be considered authorized work and be paid for as provided in the Contract after the Notice to Proceed is issued.

7.1.5 For repairs and/or renovations of existing buildings, unless otherwise permitted by the Project Engineer, the Contractor shall not commence with the physical construction unless all or sufficient amount of materials are available for either continuous construction or completion of a specified portion of the work. When construction is started, the Contractor shall work expeditiously and pursue the work diligently until it is complete. If only a portion of the work is to be done in stages, the Contractor shall leave the area safe and usable for the user agency at the end of each stage.

7.2 COMMENCEMENT REQUIREMENTS - Prior to beginning work on site, the Contractor shall submit the following to the Project Engineer:

7.2.1 Identification of the Superintendent or authorized representative on the job site. Refer to Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE HPHA;

7.2.2 Proposed Working Hours on the job. Refer to Section 7.5, **NORMAL WORKING HOURS**;

7.2.3 Permits and Licenses. Refer to Section 7.4, **PERMITS AND LICENSES**;

7.2.4 Schedule of Prices to be accepted for the agreed Monthly Payment Application. Unless the proposal provides unit price bids on all items in this project, the successful Bidder will be required, after the award of contract, to submit a schedule of prices for the various items of construction included in the contract. For projects involving more than a single building and / or facility, the breakdown cost shall reflect a separate schedule of prices for the various items of work for each building and/or facility. The sum of the prices submitted for the various items must equal the lump sum bid in the Bidder's proposal. This schedule will be subject to acceptance by the Project Engineer who may reject same and require the Bidder to submit another or several other schedules if in the Project Engineer's opinion the prices are unbalanced or not sufficiently detailed. This schedule of prices shall be used for the purpose of determining the value of monthly payments due the Contractor for work installed complete in place; and may be used as the basis for determining cost and credit of added or deleted items of work, respectively;

7.2.4.1 The Contractor shall estimate at the close of each month the percentage of work completed under each of the various construction items during such month and submit the Monthly Payment Application to the Project Engineer for review and approval. The Contractor shall be paid the approved percentage of the price established for each item less the retention provided in Section 8.4, **PROGRESS AND/OR PARTIAL PAYMENTS**; and

7.2.5 **PROOF OF INSURANCE COVERAGE** - Certificate of Insurance or other documentary evidence satisfactory to the Project Engineer that the Contractor has in place all insurance coverage required by the contract. Refer to Section 7.3, **INSURANCE REQUIREMENTS**.

7.2.6 Until such time as the above items are processed and approved, the Contractor shall not be allowed to commence on any operations unless authorized by the Project Engineer.

7.3 **INSURANCE REQUIREMENTS**

7.3.1 **OBLIGATION OF CONTRACTOR** - Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance shall be provided by an insurance company authorized by the laws of the State to issue such insurance in the State of Hawaii. Coverage by a "Non-Admitted" carrier is permissible provided the carrier has a Best's Rating of "A-8" or better.

7.3.2 All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the **HPHA**.

7.3.3 Certificate(s) of Insurance acceptable to the **HPHA** shall be filed with the Project Engineer prior to commencement of the work. Certificates shall identify if the insurance company is a "captive" insurance company or a "Non-Admitted" carrier to the State of Hawaii. The Best's rating must be stated for the "Non-Admitted" carrier. Certificates shall contain a provision that coverage(s) being certified will not be cancelled or materially changed without giving the Project Engineer at least thirty (30) days prior written notice. The **HPHA** is to be named as Additional Insured on any of the required insurance and it shall be so noted on the certificate. Should any policy be cancelled before final acceptance of the

work by the HPHA, and the Contractor fails to immediately procure replacement insurance as specified, the HPHA, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

7.3.4 Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this Contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the HPHA harmless pursuant to other provisions of this Contract. In no instance will the HPHA's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.

7.3.5 All insurance described herein shall be primary and cover the insured for all work to be performed under the Contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area and all change order work.

7.3.6 The Contractor shall, from time to time, furnish the Project Engineer, when requested, satisfactory proof of coverage of each type of insurance required covering the work. Failure to comply with the Project Engineer's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.

7.3.7 TYPES OF INSURANCE - Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the Contract, whether such operations be by the Contractor itself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

7.3.7.1 WORKER'S COMPENSATION - The Contractor shall obtain worker's compensation insurance for all persons whom they employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.

7.3.7.2 COMMERCIAL GENERAL LIABILITY INSURANCE AND AUTOMOBILE INSURANCE Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than \$1,000,000 (one million dollars) unless otherwise indicated in the Special Conditions per occurrence that shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, in connection with, the performance of work under this contract.

7.3.7.3 The Contractor's property damage liability insurance shall provide for a single combined limit of not less than \$2,000,000 (two million dollars) unless otherwise indicated in the Special Conditions for all damages arising out of injury to or destruction of property of others including the HPHA's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

7.3.7.4 The Contractor shall either (a) Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractor's comprehensive general liability, automobile liability and property damage liability insurance of the type and in the same amounts specified herein; or (b) Insure the activities of its subcontractors in its own policy.

7.3.7.5 **BUILDERS RISK INSURANCE** - Unless excluded by the Special Conditions of this contract, the Contractor shall provide builder's risk insurance during the progress of the work and until final acceptance by the HPHA upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the HPHA as an additional named insured. The Contractor shall submit to the Project Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to twenty five percent (25%) of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the HPHA shall be that of insurer and the additional insured respectively as if no deductible existed. The Contractor is responsible for theft, if any item of the contract is stolen prior to, or after installation, until the work is accepted by the HPHA. Progress payment does not constitute acceptance.

7.4 **PERMITS AND LICENSES**

7.4.1 The HPHA or its representative may process Federal (e.g. Corps of Engineers), State and county permit applications. The Contractor shall pick up the pre-processed Permits at the appropriate governmental agency and pay the required fees. Other permits necessary for the proper execution of the work such as utility connection permits, elevator installation permits etc., unless processed by the HPHA and paid for by the Contractor, shall be obtained and paid for by the Contractor.

7.4.2 Until such time as the above permits are approved, the Contractor shall not be allowed to commence any operations without written approval of the Project Engineer.

7.4.3 The Project Engineer reserves the right to waive application and processing of the building permit.

7.5 **NORMAL WORKING HOURS** - Prior to beginning operations, unless otherwise established by the HPHA, the Contractor shall notify the Project Engineer in writing of the time in hours and minutes, A.M. and P.M. respectively, at which it desires to begin and end the day's work. If the Contractor desires to change the working hours, it shall request the Project Engineer's approval three (3) consecutive working days prior to the date of the change.

7.6 **HOURS OF LABOR (§104-2 HRS)**

7.6.1 No laborer or mechanic employed on the job site of any public work of the HPHA or any political sub-division thereof shall be permitted or required to work on Saturday, Sunday or a legal holiday of the State or in excess of eight (8) hours on any other day unless the laborer or mechanic receives overtime compensation for all hours worked on Saturday, Sunday and a legal holiday of the State or in excess of eight (8) hours on any other day. For the purposes of determining overtime compensation under this Section 7.6, HOURS OF LABOR (§104-2 HRS) the basic hourly rate of any laborer or mechanic shall not be less than the basic hourly rate determined by the Department of Labor and Industrial Relations to be the prevailing basic hourly rate for corresponding classes of laborers and mechanics on projects of similar character in the HPHA.

7.6.2 Overtime compensation means compensation based on one and one-half times the laborers or mechanics basic hourly rate of pay plus the cost to an employer of furnishing a laborer or mechanic with fringe benefits.

7.7.1 The Contractor shall at all time observe and comply with all provisions of Chapter 104, HRS, the significant requirements of which are emphasized in the Department of Labor and Industrial Relations Publication No. H104-3 entitled "Requirements of Chapter 104, Hawaii Revised Statutes, Wages and Hours of Employees on Public Works Law".

The Contractor must also comply with all provisions of Federal Davis-Bacon Act (40 U.S.C. 276-276a-5 and Code of Federal Regulation (CFR) Title 29 and related Acts.

7.7.2 WAGE RATE SCHEDULE - The wage rate schedule is physically enclosed in the bid documents. The wage rate schedule is incorporated herein by reference and made a part of the Bid and Contract Documents. The bidder must obtain and use the latest minimum rates ten (10) days prior to the date set for the bid opening of bids. The wage rate schedule may be obtained from the Contract and Procurement Office, HPHA, 1002 North School Street, Building D, Honolulu, Hawaii or, State Department of Labor and Industrial Relations web site: <http://www.loihi@rs.dlir.state.hi.us> or the Federal Department of Labor (Davis-Bacon) wage rate schedule web site: <http://www.hud.gov> or at the direct web site at: <http://www.gpo.gov/davisbacon/>.

7.7.3 The Contractor or its subcontractor(s) shall pay all laborers and mechanics employed on the job site, unconditionally and not less often than once a week, and without deduction or rebate on any account except as allowed by law, the full amounts of their wages including overtime, accrued to not more than five (5) working days prior to the time of payment, at wage rates not less than those stated in the contract, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractor and such laborers and mechanics. The wages stated in the contract shall not be less than the minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules. Any increase in wage rates, as determined by the Director of Labor and Industrial Relations and issued in the wage rate schedule, shall be applicable during the performance of the contract, in accordance with Section 104-2(a) and (b), Hawaii Revised Statutes. Notwithstanding the provisions of the original contract, if the Director of Labor and Industrial Relations determines that prevailing wages have increased during the performance of the contract, the rate of pay of laborers and mechanics shall be raised accordingly.

7.7.4 The applicable wage rate schedule shall be physically included in the Contract Documents executed by the successful Bidder.

7.7.5 POSTING WAGE RATE SCHEDULE - The rates of wages to be paid shall be posted by the Contractor in a prominent and easily accessible place at the job site and a copy of such wages required to be posted shall be given to each laborer and mechanic employed under the contract by the Contractor at the time the person is employed thereunder, provided that where there is a collective bargaining agreement, the Contractor does not have to provide its employees the wage rate schedules. Any revisions to the schedule of wages issued by the Director of Labor and Industrial Relations during the course of the Contract shall also be posted by the Contractor and a copy provided to each laborer and mechanic employed under the Contract as required above.

7.7.6 The Executive Director may withhold from the Contractor so much of the accrued payments as the Executive Director may consider necessary to pay to laborers and mechanics employed by the Contractor or any subcontractor on the job site. The accrued payments withheld shall be the difference between the wages required by this Contract and the wages actually received by such laborers or mechanics.

7.8 FAILURE TO PAY REQUIRED WAGES (§ 104-4, HRS or Federal Davis-Bacon) - If the HPHA finds that any laborer or mechanic employed on the job site by the Contractor or any subcontractor has been or is being paid wages at a rate less than the required rate by the Contract, or has not received their full overtime compensation, the HPHA may, by written notice to the Contractor, terminate its right, or the right of any subcontractor, to proceed with the work or with the part of the work on which the required wages or overtime compensation have not been paid and may complete such work or part by contract or otherwise, and the Contractor and its sureties shall be liable to the HPHA for any excess costs occasioned thereby.

7.9 PAYROLLS AND PAYROLL RECORDS (§104-3 HRS)

7.9.1 A certified copy of each weekly payroll shall be submitted to the Executive Director within seven (7) calendar days after the end of each weekly payroll period. Failure to do so on a timely basis shall be cause for withholding of payments, termination of the contract, and/or debarment. The Contractor shall be responsible for the timely submission of certified copies of payrolls of all subcontractors. The certification shall affirm that payrolls are correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the wage determination decision, any amendments thereto during the period of the contract, and that the classifications set forth for each laborer and mechanic conform with the work they performed.

7.9.2 Payroll records for all laborers and mechanics working at the site of the work shall be maintained by the General Contractor and its subcontractors, if any, during the course of the work and preserved for a period of four (4) years thereafter. Such records shall contain the name of each employee, their address, their correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. Such records shall be made available for inspection at a place designated by the Executive Director, the Director of Labor and any authorized persons who may also interview employees during working hours on the job site.

7.9.3 Note that the falsification of certifications noted in this Section 7.9, PAYROLLS AND PAYROLL RECORDS (§104-3 HRS) may subject the Contractor or subcontractor to penalties and debarment under the laws referenced in Section 7.14, LAWS TO BE OBSERVED and / or criminal prosecution.

7.10 OVERTIME AND NIGHT WORK

7.10.1 Overtime work shall be considered as work performed in excess of eight (8) hours in any one (1) day or work performed on Saturday, Sunday or legal holiday of the State. Overtime and night work are permissible when approved by the Project Engineer in writing, or as called for elsewhere within these Contract Documents.

7.10.2 OVERTIME NOTIFICATION - Contractor shall inform the Project Engineer in writing at least two (2) working days in advance as to exactly what specific work is to be done during any overtime and night period to ensure that proper inspection will be available.

7.10.3 In the event that work other than that contained in the above notification is performed and for which the Project Engineer determines HPHA inspection services were necessary but not available because of the lack of notification, the Contractor may be required to remove all such work and perform the work over again in the presence of HPHA inspection personnel.

7.10.4 Any hours worked in excess of the normal eight (8) working hours per day or on Saturdays, Sundays or legal State holidays will not be considered a working day.

7.10.5 The HPHA hereby reserves the right to cancel the overtime, night, Saturday, Sunday or legal State holiday work when it is found that work during these periods is detrimental to the public welfare or the user agency.

7.11 OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE

7.11.1 Whenever the Contractor's operations require the HPHA's inspection and staff personnel to work overtime or at night, the Contractor shall reimburse the HPHA for the cost of such services unless otherwise instructed in the Contract. The Project Engineer will notify the Contractor of the minimum number of required HPHA employees and other personnel engaged by the HPHA prior to the start of any such work. The costs chargeable to the Contractor shall include but not be limited to the following:

7.11.1.1 The cost of salaries which are determined by the HPHA and includes overtime and night time differential for the HPHA's staff and inspection personnel. In addition to the cost of the salaries, the Contractor shall reimburse the HPHA's share of contributions to the employee's retirement, medical plan, social security, vacation, sick leave, worker's compensation funds, per diem, and other applicable fringe benefits and overhead expenses;

7.11.1.2 The transportation cost incurred by the HPHA's staff and inspection personnel which are based on established rental rates or mileage allowance in use by the HPHA for the particular equipment or vehicle; and/or

7.11.1.3 Fees and other costs billed the HPHA by Consultants engaged on the project for overtime and/or night time work.

7.11.2 PAYMENT FOR INSPECTION SERVICES - The monies due the HPHA for staff and inspection work and use of vehicles and equipment as determined in Subsection 7.11.1, OVERTIME AND NIGHT PAYMENT FOR HPHA INSPECTION SERVICE shall be deducted from the monies due or to become due the Contractor. In any and all events, the Contractor shall not pay the HPHA's employees directly.

7.12 LIMITATIONS OF OPERATIONS

7.12.1 Contractor shall at all times conduct the work in such manner and in such sequence as will ensure the least practicable interference with pedestrian and motor traffic passageways. The Contractor shall furnish convenient detours and provide and plan all other appropriate signs, flashers, personnel, warnings, barricades and other devices for handling pedestrian and motor traffic.

7.12.2 In the event that other contractors are also employed on the job site, the Contractor shall arrange its work and dispose of materials so as not to interfere with the operations of the other contractors engaged upon adjacent work. The Contractor shall join its work to that of others and existing buildings in a proper manner, and in accordance with the drawings and specifications, and perform its work in the proper sequence in relation to that of others, all as may be directed by the Project Engineer.

7.12.3 Each Contractor shall be responsible for any damage done by it to work performed by another contractor. Each Contractor shall conduct its operations and maintain

the work in such condition that no fugitive dust shall be created and adequate drainage shall be in effect at all times.

7.12.4 In the event that the Contractor fails to prosecute its work as provided in this Section 7.12, LIMITATIONS OF OPERATIONS or disregards the directions of the Project Engineer, the Project Engineer may suspend the work until such time as the Contractor provides for the prosecution of the work with minimum interference to traffic and passageways or other contractors, dust control, adequate drainage, the repair of damage and complies with the direction of the Project Engineer. No payment will be made to the Contractor for the costs of such suspension.

7.13 ASSIGNMENT OR CHANGE OF NAME (§3-125-14 HAR)

7.13.1 SUBCONTRACTS AND ASSIGNMENT - The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR's duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE and (ii) the CONTRACTOR's assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, showing that all delinquent taxes, if any, levied or accrued under state law against the CONTRACTOR's assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR's right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in Section 40-58, HRS.

7.13.2 RECOGNITION OF A SUCCESSOR IN INTEREST - When in the best interest of the State, a successor in interest may be recognized in an assignment Contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

7.13.2.1 The Assignee assumes all of the CONTRACTOR's obligations;

7.13.2.2 The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and

7.13.2.3 The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

7.13.3 CHANGE OF NAME - When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR's articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR's name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

7.13.4 REPORTS - All assignment Contracts and amendments to this Contract effecting changes of the CONTRACTOR's name or novations hereunder shall be reported to the CPO within thirty days of the date that the assignment Contract or amendment becomes effective.

7.13.5 ACTIONS AFFECTING MORE THAN ONE PURCHASING AGENCY - Notwithstanding the provisions of Subsections 7.13.2 through 7.13.4 herein, when the CONTRACTOR holds Contracts with more than one purchasing agency of the State, the

assignment Contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.

7.14 LAWS TO BE OBSERVED - The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR's performance of this Contract.

7.14.1 The Contractor at all times shall observe and comply with all Federal, State and local laws or ordinances, rules and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The Contractor shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules and regulations shall include any amendments thereto before and after the date of this Contract.

7.14.2 The Contractor shall defend, protect, hold harmless and indemnify the State and its departments and agencies and all their officers, representatives, employees or agents against any claim or liability arising from or based on the violation of any such laws, ordinances, rules and regulations, orders or decrees, whether such violation is committed by the Contractor or its Subcontractor(s) or any employee of either or both. If any discrepancy or inconsistency is discovered in the contract for the work in relation to any such laws, ordinances, rules and regulations, orders or decrees, the Contractor shall forthwith report the same to the Project Engineer in writing.

7.14.3 While the Contractor must comply with all applicable laws, attention is directed to: Wage and Hours of Employees on Public Works, Chapter 104, Hawaii Revised Statutes (HRS); Hawaii Public Procurement Code, Authority to debar or suspend, Section 103D-702, HRS; Hawaii Employment Relations Act, Chapter 377, HRS; Hawaii Employment Security Law, Chapter 383, HRS; Worker's Compensation Law, Chapter 386, HRS; Wage and Hour Law, Chapter 387, HRS; Occupational Safety and Health, Chapter 396, HRS; and Authority to Debar or Suspend, Chapter 126, subchapter 2, Hawaii Administrative Rules (HAR).

7.14.4 CONFLICT BETWEEN GENERAL CONDITIONS AND PROCUREMENT RULES - In the event of a conflict between the General Conditions and the Procurement Rules, the Procurement Rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.

7.15 PATENTED DEVICES, MATERIALS AND PROCESSES - If the Contractor desires to use any design, device, material, or process covered by letters of patent or copyright, the right for such use shall be procured by the Contractor from the patentee or owner. The Contractor shall defend, protect, indemnify and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including attorney' fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented design, patented device, patented process, patented appliance or patented material in connection with this Contract. The Contractor shall be solely responsible for correcting or curing to the satisfaction of the HPHA any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the HPHA a substitute article, design, device, process, appliance or material acceptable to the HPHA; (b) paying royalties or other required payments to the patent holder; (c) obtaining proper authorizations or releases from the patent holder; and (d) furnishing such security to or making such arrangement with the patent holder as may be necessary to correct or cure any

such infringement or improper or unauthorized use. This section shall not apply to any article, design, device, material, appliance or process covered by letters of patent or copyright, which the Contractor is required to use by the Drawings or Specifications.

7.16 SANITARY, HEALTH AND SAFETY PROVISIONS

7.16.1 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements of the State and local boards of health, or other bodies or tribunals having jurisdiction. Unless otherwise stated in the drawings or specifications, the Contractor shall install toilet facilities conveniently located at the job site and maintain same in a neat and sanitary condition for the use of the employees on the job site for the duration of the Contract. The toilet facilities shall conform to the requirements of the State Department of Health. The cost of installing, maintaining and removing the toilet facilities shall be considered incidental to and paid for under various contract pay items for work or under the lump sum bids as the case may be, and no additional compensation will be made therefor. These requirements shall not modify or abrogate in any way the requirements or regulations of the State Department of Health.

7.16.2 Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to their health or safety.

7.17 PROTECTION OF PERSONS AND PROPERTY

7.17.1 SAFETY PRECAUTIONS AND PROGRAMS - The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

7.17.1.1 All persons on the Work site or who may be affected by the Work;

7.17.1.2 All the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor and its subcontractors; and

7.17.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavement, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

7.17.2 Contractor shall give notices and comply with applicable laws, ordinances, regulations, rules, and lawful orders of any public body having jurisdiction for the safety of persons or property or their protection from damage, injury or loss; and the Contractor shall erect and maintain reasonable safeguards for safety and protection, including posting danger signs, or other warnings against hazards.

7.17.3 The Contractor shall notify owners of adjacent properties and of underground (or overhead) utilities when performing work which may affect the owners; and shall cooperate with the owners in the protection, removal and replacement of their property.

7.17.4 All damage, injury or loss to any property referred to in Subsections 7.17.1.2 and 7.17.1.3 caused by the fault or negligence or damage or loss attributable to acts or omissions directly or indirectly in whole or part by the Contractor a subcontractor or anyone

directly or indirectly employed by them, or by anyone for whose acts they might be liable, shall be remedied promptly by the Contractor.

7.17.5 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the protection of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor.

7.17.6 The Contractor shall not load or permit any part of the construction to be loaded so as to endanger its safety. The Contractor shall not injure or destroy trees or shrubs nor remove or cut them without permission of the Project Engineer. Contractor shall protect all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.

7.17.7 In the event the Contractor encounters on the site, material reasonably believed to be asbestos or other hazard material that has not been rendered harmless, the Contractor shall stop work in the area and notify the Project Engineer promptly. The work in the affected area shall be resumed in the absence of hazard materials or when the hazard has been rendered harmless.

7.17.8 EMERGENCIES - In an emergency affecting the safety and protection of persons or the Work or property at the site or adjacent thereto, Contractor without special instructions or authorization from the Project Engineer, shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Contractor shall give the Project Engineer prompt written notice of the emergency and actions taken. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined under the provisions of Section 7.25, DISPUTES AND CLAIMS.

7.18 ARCHAEOLOGICAL SITES

7.18.1 Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells be encountered during construction, work shall cease in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor shall immediately notify the Project Engineer and contact the State Historic Preservation Division which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary.

7.18.2 When required, the Contractor shall provide and install any temporary fencing to protect archaeological sites within the project. The fencing shall be installed prior to any construction activity and shall be maintained by the Contractor for the duration of the project. Fence installation and maintenance shall be to the satisfaction of the Project Engineer. The Contractor shall remove the fencing upon completion of construction, or as directed by the Project Engineer.

7.18.3 No work shall be done within the temporary fencing area. If any construction work is done within the temporary fencing, the Contractor shall notify the Project Engineer immediately; and if the Contractor entered the archaeological site area without permission, it shall stop work in this area immediately. The Project Engineer shall notify the archaeologist to assess any damage to the area. The Contractor shall allow the archaeologist sufficient time to perform the field investigation.

7.18.4 Any site requiring data recovery within the project shall not be disturbed until data recovery is completed.

RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY

7.19.1 The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefor, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR's employees, officers, agents, or subcontractors under this Contract. The provisions of this Subsection shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.

7.19.2 The Contractor agrees that it will not attempt to hold the State and the Department, their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these Contract Documents or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

7.19.3 The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the HPHA unless all such claims are paid or released. The HPHA may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Project Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

7.19.4 The Contractor shall defend, indemnify and hold harmless the State and the Department, their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising out of or recovered under the Workers' Compensation Laws or violation of any other law, by-law, ordinance, order or decree.

7.19.5 **COST OF LITIGATION** - In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.

7.20 CHARACTER OF WORKERS OR EQUIPMENT

7.20.1 The Contractor shall at all times provide adequate supervision and sufficient labor and equipment for prosecuting the work to full completion in the manner and within the time required by the contract.

7.20.2 **Character and Proficiency of Workers** - All workers shall possess the proper license and/or certification, job classification, skill and experience necessary to properly perform the work assigned to them. All workmen engaged in special work or skilled work, such as bituminous courses or mixtures, concrete pavement or structures, electrical installation, plumbing installation, or in any trade shall have sufficient experience in such work and in the operation of the equipment required to properly and satisfactorily perform all work. All workers shall make due and proper effort to execute the work in the manner prescribed in these Contract Documents, otherwise, the Project Engineer may take action as prescribed herein.

7.20.2.1 Any worker employed on the project by the Contractor or by any subcontractor who, in the opinion of the Project Engineer, is not careful and competent, does not perform its work in a proper and skillful manner or is disrespectful, intemperate,

disorderly or neglects or refuses to comply with directions given, or is otherwise objectionable shall at the written request of the Project Engineer, be removed forthwith by the Contractor or subcontractor employing such worker and shall not be employed again in any portion of the work without the written consent of the Project Engineer. Should the Contractor or subcontractor continue to employ, or again employ such person or persons on the project, the Project Engineer may withhold all payments which are or may become due, or the Project Engineer may suspend the work until the Project Engineer's orders are followed, or both.

7.20.3 INSUFFICIENT WORKERS - A sufficient number of workers shall be present to ensure the work is accomplished at an acceptable rate. In addition, the proper ratio of apprentice to journey worker shall be maintained to ensure the work is properly supervised and performed. In the event that the Project Engineer finds insufficient workers are present to accomplish the work at an acceptable rate of progress or if a adequate number of journey workers are not present and no corrective action is taken by the Contractor after being informed in writing, the Executive Director may terminate the Contract as provided for under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

7.20.4 EQUIPMENT REQUIREMENTS - All equipment furnished by the Contractor and used on the work shall be of such size and of such mechanical condition that the work can be performed in an acceptable manner at a satisfactory rate of progress and the quality of work produced will be satisfactory.

7.20.4.1 Equipment used on any portion of the project shall be such that no injury to the work, persons at or near the site, adjacent property or other objects will result from its use.

7.20.4.2 If the Contractor fails to provide adequate equipment for the work, the contract may be terminated as provided under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

7.20.4.3 In the event that the Contractor furnishes and operates equipment on a force-account basis, it shall be operated to obtain maximum production under the prevailing conditions.

7.21 CONTRACT TIME

7.21.1 Time is of the essence for this Contract.

7.21.2 CALCULATION OF CONTRACT TIME - When the contract time is on a working day basis, the total contract time allowed for the performance of the work shall be the number of working days shown in the contract plus any additional working days authorized in writing as provided hereinafter. Refer to ARTICLE 1, DEFINITIONS for the definition of Working Day. The count of elapsed working days to be charged against contract time shall begin from the date of the Notice to Proceed and shall continue consecutively to the date of Project Acceptance determined by the Project Engineer. When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be completed. Maintenance periods are not included within the contract time unless specifically noted in the Contract Documents. Failure to complete the work by contract completion date shall not terminate the Contract.

7.21.3 MODIFICATIONS OF CONTRACT TIME (§3-125-4 HAR)

7.21.3.1 EXTENSIONS - For increases in the scope for work caused by alterations and additional work made under Section 4.2, CHANGES, the Contractor will be granted a

time extension only if the changes increase the time of performance for the Contract. If the Contractor believes an extension of time is justified and is not adequately provided for in a Field Order, it must request the additional time sought in writing when the detailed cost breakdown required by Section 4.2, CHANGES, is submitted. The Contractor must show how the time of performance for the critical path will be affected and must also support the time extension request with schedules and statements from its subcontractors, suppliers, and/or manufacturers. Compensation for any altered or additional work will be paid as provided in Section 4.2, CHANGES.

7.21.3.2 The HPHA may direct changes to the work at any time until the work is finally accepted. The issuance of a Field Order at any time may alter or modify the contract duration only by the days specified therein; or if not specified therein, for the days the critical path must be extended for the change. Additional time to perform the extra work will be added to the time allowed in the contract without regard to the date the change directive was issued, even if the contract completion date has passed. A change requiring time will not constitute a waiver of pre-existing Contractor delay.

7.21.4 DELAY FOR PERMITS - For delays beyond the control of the Contractor in obtaining necessary permits, one day extension for each day delay may be granted by the Project Engineer, provided the Contractor notifies the Project Engineer that the permits are not available, as soon as the delay occurs. Time extensions shall be the exclusive relief granted on account of such delays. No additional compensation will be paid for these time extensions.

7.21.5 DELAYS BEYOND CONTRACTOR'S CONTROL - For delays affecting the critical path caused by acts of God, or the public enemy, fire, unusually severe weather, earthquakes, floods, epidemics, quarantine restrictions, labor disputes, freight embargoes and other reasons beyond the Contractor's control, the Contractor may be granted an extension of time provided that:

7.21.5.1 The Contractor notifies the Project Engineer in writing within five (5) work days after the occurrence of the circumstances described above and states the possible effects on the completion date of the contract.

7.21.5.2 No time extension will be granted for weather conditions other than unusually severe weather occurrences, and floods.

7.21.5.3 The Contractor, if requested, submits to the Project Engineer within ten (10) work days after the request, a written statement describing the delay to the project. The extent of delay must be substantiated as follows:

(a) State specifically the reason or reasons for the delay and fully explain in a detailed chronology the effect of this delay to the work and/or the completion date;

(b) Submit copies of purchase order, delivery tag, and any other pertinent documentation to support the time extension request;

(c) Cite the period of delay and the time extension requested; and

(d) A statement either that the above circumstances have been cleared and normal working conditions restored as of a certain day or that the above circumstances will continue to prevent completion of the project.

7.21.5.4 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor for such delays.

7.21.6 DELAYS IN DELIVERY OF MATERIALS - For delays in delivery of materials and/or equipment which occur as a result of unforeseeable causes beyond the control and without fault or negligence of the Contractor, its subcontractor(s) or supplier(s), the Contractor may be granted an extension of time provided it complies with the following procedures:

7.21.6.1 The Contractor must notify the Project Engineer in writing within five (5) consecutive working days after it first has any knowledge of delays or anticipated delays and state the effects such delays may have on the completion date of the Contract.

7.21.6.2 The Contractor, if requested, must submit to the Project Engineer within ten (10) working days after a firm delivery date for the material and equipment is established, a written statement as to the delay to the progress of the project. The delay must be substantiated as follows:

(a) State specifically the reason or reasons for the delay. Explain in a detailed chronology the effect of this delay to the other work and / or the completion date;

(b) Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s) and any other pertinent correspondence to support the time extension request; and

(c) Cite the start and end date of the delay and the days requested therefore. The delay shall not exceed the difference between the originally scheduled delivery date versus the actual delivery date.

7.21.6.3 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor on account of such delay.

7.21.7 DELAYS FOR SUSPENSION OF WORK - Delay during periods of suspension of the work by the Project Engineer shall be computed as follows:

7.21.7.1 When the performance of the work is totally suspended for one (1) or more days (calendar or working days, as appropriate) by order of the Project Engineer in accordance with Subsections 7.24.1.1, 7.24.1.2, 7.24.1.4 or 7.24.1.6 the number of days from the effective date of the Project Engineer's order to suspend operations to the effective date of the Project Engineer's order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. Should the Contractor claim for additional days in excess of the suspension period, Contractor shall provide evidence justifying the additional time. During periods of partial suspensions of the work, the Contractor will be granted a time extension only if the partial suspension affects the critical path. If the Contractor believes that an extension of time is justified for a partial suspension of work, it must request the extension in writing at least five (5) working days before the partial suspension will affect the critical operation(s) in progress. The Contractor must show how the critical path was increased based on the status of the work and must also support its claim, if requested, with statements from its subcontractors. A suspension of work will not constitute a waiver of pre-existing Contractor delay.

7.21.8 CONTRACTOR CAUSED DELAYS - No time extension will be considered for the following:

7.21.8.1 Delays in performing the work caused by the Contractor, subcontractor and/or supplier;

7.21.8.2 Delays in arrival of materials and equipment caused by the Contractor, subcontractor and /-or supplier in ordering, fabricating, delivery, etc.;

7.21.8.3 Delays requested for changes which the Project Engineer determines unjustifiable due to the lack of supporting evidence or because the change is not on the critical path;

7.21.8.4 Delays caused by the failure of the Contractor to submit for review and acceptance by the Project Engineer, on a timely basis, pricing proposals, shop drawings, descriptive sheets, material samples, color samples, etc. except as covered in Subsection 7.21.5 and 7.21.6;

7.21.8.5 Failure to follow the procedure within the time allowed to qualify for a time extension; and

7.21.8.6 Days the Contractor is unable to work due to normal rainfall or other normal bad weather day conditions.

7.21.9 REDUCTION IN TIME - If the HPHA deletes any portion of the work, an appropriate reduction of contract time may be made in accordance with Section 4.2, CHANGES.

7.22 CONSTRUCTION SCHEDULE

7.22.1 The Contractor shall submit its detailed construction schedule to the Project Engineer prior to the start of the work. The purpose of the schedule is to allow the Project Engineer to monitor the Contractor's progress on the work. The schedule shall account for normal inclement weather, unusual soil or other conditions that may influence the progress of the work, schedules and coordination required by any utility, off or on site fabrications, and all other pertinent factors that relate to progress.

7.22.2 Submittal of and the Project Engineer's receipt of the construction schedule shall not imply the HPHA's approval of the schedule's breakdown, its individual elements, and any critical path that may be shown. Any acceptance or approval of the schedule: (1) shall be for general format only and not for sequences or durations thereon; and (2) shall not be deemed an agreement by the HPHA that the construction means, methods and resources shown on the schedule will result in work that conforms to the contract requirements. The Contractor has the risk of all elements (whether or not shown) of the schedule and its execution.

7.22.3 In the event the Contractor submits and the HPHA receives an accelerated schedule (shorter than the contract time), such will not constitute an agreement to modify the contract time or completion date, nor will the receipt, acceptance or approval of such a schedule incur any obligation by the HPHA. The Contractor shall be solely responsible for and shall accept all risks and any delays that may materialize during the construction work until the contract completion date is reached. The contract time or completion date is established for the benefit of the HPHA and cannot be changed without an appropriate change order issued by the HPHA. All float on an accelerated schedule belongs exclusively to the HPHA. The HPHA will not be responsible for or obligated to accept the work before the completion date established by the Contract.

7.23 STATEMENT OF WORKING DAYS - For all contracts on a working day basis, the Contractor will submit a statement of the number of working days for each month together with the Monthly Payment Application. The Monthly Payment Application will not be processed without the statement of working days.

7.24 SUSPENSION OF WORK (§3-125-7 HAR)

7.24.1 PROCEDURE TO BE FOLLOWED - The Executive Director may, by written order to the Contractor, at any time and without notice to any surety, suspend the performance of the Work either in whole or in part for any cause, including but not limited to:

7.24.1.1 Weather or excess bad weather days, considered unsuitable by the Project Engineer for prosecution of the work; or

7.24.1.2 Soil Conditions considered unsuitable by the Project Engineer for prosecution of the work; or

7.24.1.3 Failure of the Contractor to:

(a) Correct conditions unsafe for the general public or for the workers;

(b) Carry out orders given by the Project Engineer;

(c) Perform the work in strict compliance with the provisions of the contract; or

(d) Provide a qualified Superintendent on the jobsite as described under Subsection 5.9.2, SUPERINTENDENT.

7.24.1.4 When any redesign is deemed necessary by the Project Engineer; or

7.24.1.5 Disturbance due to noise, odors or dust arising from the construction even if such disturbance does not violate the section on Environmental Protection contained in the Contract Documents; or

7.24.1.6 The convenience of the Department.

7.24.2 PARTIAL OR TOTAL SUSPENSION OF WORK - Suspension of work on some but not all items of work shall be considered a partial suspension. Suspension of work on the entire work at the job site shall be considered total suspension. The period of suspension shall be computed as set forth in Subsection 7.21.7, Delays for Suspension of Work.

7.24.3 PAYMENT

7.24.3.1 In the event that the Contractor is ordered by the Executive Director in writing as provided herein to suspend all work under the contract in accordance with Subsections 7.24.1.4 or 7.24.1.6, the Contractor may be reimbursed for actual direct costs incurred on work at the jobsite, as authorized in writing by the Executive Director, including costs expended for the protection of the work. Payment for equipment which must standby during such suspension of work shall be made as described in clause 8.3.4.5.(e).

7.24.3.2 However, no adjustment to the contract amount or time shall be made under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) for any suspension, delay, or interruption:

(a) To the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor; or

(b) For which an adjustment is provided for or excluded under any other provision of this Contract.

7.24.3.3 Any adjustment in contract price made pursuant to this subsection shall be determined in accordance with this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) and Section 4.2, CHANGES.

7.24.3.4 Claims for such compensation shall be filed with the Project Engineer within ten (10) calendar days after the date of the order to resume work or such claims will be waived by the Contractor. Together with the claim, the Contractor shall submit substantiating documents supporting the entire amount shown on the claim. The Executive Director may make such investigations as are deemed necessary and shall be the sole judge of the claim and the Executive Director's decision shall be final.

7.24.4 CLAIMS NOT ALLOWED - No claim under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be allowed:

7.24.4.1 For any direct costs incurred more than twenty (20) days before the Contractor shall have notified the Project Engineer in writing of any suspension that the Contractor considers compensable. This requirement shall not apply as to a claim resulting from a suspension order under Subsections 7.24.1.4 or 7.24.1.6; and

7.24.4.2 Unless the claim is asserted in writing within ten (10) calendar days after the termination of such suspension, delay, or interruption, but in no case not later than the date of final payment under the contract.

7.24.4.3 No provision of this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be construed as entitling the Contractor to compensation for delays due to failure of surety, for suspensions made at the request of the Contractor, for any delay required under the Contract, for partial suspension of work or for suspensions made by the Project Engineer under the provisions of Subsections 7.24.1.1, 7.24.1.2, 7.24.1.3 and 7.24.1.5.

7.25 DISPUTES AND CLAIMS (§3-126-31 HAR) - Disputes shall be resolved in accordance with Section 103D-703, HRS, and chapter 126, Procurement Rules, as the same may be amended from time to time.

7.25.1 REQUIRED NOTIFICATION - As a condition precedent for any claim, the Contractor must give notice in writing to the Project Engineer in the manner and within the time periods stated in Section 4.2, CHANGES for claims for extra compensation, damages, or an extension of time due for one or more of the following reasons:

7.25.1.1 Requirements not clearly covered in the Contract, or not ordered by the Project Engineer as an extra;

7.25.1.2 Failure by the HPHA and Contractor to agree to an Oral Order or an adjustment in price or contract time for a Field Order or a Change Order (which was not previously agreed on by a Field Order), issued by the HPHA;

7.25.1.3 An action or omission by the Project Engineer requiring performance changes beyond the scope of the Contract; and/or

7.25.1.4 Failure of the HPHA to issue a Field Order for controversies within the scope of Section 4.2, CHANGES.

7.25.1.5 For any other type of claim, the Contractor shall give notice within the time periods set forth in contract provisions pertaining to that event. If no specific contract provisions pertain to the claim, then the written notice of claim must be submitted within fifteen (15) days of the event giving rise to the claim.

7.25.2 CONTINUED PERFORMANCE OF WORK - The Contractor shall at all times continue with performance of the contract in full compliance with the directions of the Project Engineer. Continued performance by the Contractor shall not be deemed a waiver of any claim for additional compensation, damages, or an extension of time for completion, provided that the written notice of claim is submitted in accordance with Subsection 7.25.1, REQUIRED NOTIFICATION.

7.25.3 The requirement for timely written notice shall be a condition precedent to the assertion of a claim.

7.25.4 REQUIREMENTS FOR NOTICE OF CLAIM - The notice of claim shall clearly state the Contractor's intention to make claim and the reasons why the Contractor believes that additional compensation, changes or an extension of time may be remedies to which it is entitled. At a minimum, it shall provide the following:

7.25.4.1 Date of the protested order, decision or action;

7.25.4.2 The nature and circumstances which caused the claim;

7.25.4.3 The contract provision(s) that support the claim;

7.25.4.4 The estimated dollar cost, if any, of the protested work and how that estimate was determined; and

7.25.4.5 An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.

7.25.5 If the protest or claim is continuing, the information required in Subsection 7.25.4, REQUIREMENTS FOR NOTICE OF CLAIMS above shall be supplemented as requested by the Project Engineer.

7.25.6 FINAL STATEMENT FOR CLAIM - The Contractor shall provide a final written statement of the actual adjustment in contract price and/or contract time requested for each notice of claim. Such statement shall clearly set forth that it is the final statement for that notice of claim. All such final statements shall be submitted within thirty (30) days after completion of the work that is the subject of the claim, but in no event no later than thirty (30) days after the Project Acceptance Date or the date of termination of the Contractor, whichever comes first.

7.25.7 All claims of any nature are barred if asserted after final payment under this Contract has been made.

7.25.8 Contractor may protest the assessment or determination by the Project Engineer of amounts due the HPHA from the Contractor by providing a written notice to the Executive Director within thirty (30) days of the date of the written assessment or determination. Said notice shall comply with all requirements of Subsections 7.25.4, REQUIREMENTS FOR NOTICE OF CLAIM and 7.25.6, FINAL STATEMENT FOR CLAIM above. The requirement of such notice cannot be waived and it is a condition precedent to any claim by the Contractor. Failure to comply with these notice provisions constitutes a waiver of any claim.

7.25.9 In addition to the requirements of Subsections 7.25.4, 7.25.6, and 7.25.8, all final written statements of claim shall be certified. This certification requirement applies to the Contractor without exception, including, but not limited to, situations involving claims of subcontractors or suppliers which meet the requirements of Subsection 5.13.4. The certification must be executed by a person duly authorized to bind the Contractor with respect to the claim. The certification shall state as follows:

7.25.9.1 "I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the HPHA is liable; and that I am duly authorized to certify the claim on behalf of the Contractor."

7.25.10 **DECISION ON CLAIM/APPEAL** - The decision of the Executive Director on the claim shall be final and conclusive, unless fraudulent, or unless the Contractor delivers to the Executive Director a written appeal of the Executive Director's decision. Said appeal shall be delivered to the Executive Director no later than thirty (30) days after the date of the Executive Director's decision.

7.25.10.1 In that event, the decision of the Executive Director shall be final and conclusive, unless fraudulent or unless the Contractor brings an action seeking judicial review of the Executive Director's decision in an appropriate circuit court of this State within six (6) months from the date of the Executive Director's decision.

7.25.11 **PAYMENT AND INTEREST** - The amount determined payable pursuant to the decision, less any portion already paid, normally should be paid without awaiting Contractor action concerning appeal. Such payments shall be without prejudice to the rights of either party. Interest on amounts ultimately determined to be due to a Contractor shall be payable at the Statutory rate applicable to judgments against the State under Chapter 662, HRS from the date of receipt of a properly certified final written statement of actual adjustment required until the date of decision; except, however, that if an action is initiated in circuit court, interest under this Section 7.25, **DISPUTES AND CLAIMS (§3-126-31 HAR)** shall only be calculated until the time such action is initiated. Interest on amounts due the HPHA from the Contractor shall be payable at the same rate from the date of issuance of the Project Engineer's notice to the Contractor. Where such payments are required to be returned by a subsequent decision, interest on such payments shall be paid at the statutory rate from the date of payment.

7.25.12 Contractor shall comply with any decision of the Executive Director and proceed diligently with performance of this contract pending final resolution by a circuit court of this State of any controversy arising under, or by virtue of, this Contract, except where there has been a material breach of contract by the HPHA; provided that in any event the Contractor shall proceed diligently with the performance of the Contract where the Project Engineer has made a written determination that continuation of work under the Contract is essential to the public health and safety.

7.25.13 **WAIVER OF ATTORNEY'S FEES** - In the event of any litigation arising under, or by virtue of, this Contract, the Contractor and the HPHA agree to waive all claims against each other for attorney's fees and agree to refrain from seeking attorney's fees as part of any award or relief from any court.

7.26 FAILURE TO COMPLETE THE WORK ON TIME

7.26.1 Completion of the work within the required time is important because delay in the prosecution of the work will inconvenience the public and interfere with the HPHA's

business. In addition, the HPHA will be damaged by the inability to obtain full use of the completed work and by increased engineering, inspection, superintendence, and administrative services in connection with the work. Furthermore, delay may detrimentally impact the financing, planning, or completion of other HPHA projects because of the need to devote HPHA resources to the project after the required completion date. The monetary amount of such public inconvenience, interference with HPHA business, and damages, is difficult, if not impossible, to accurately determine and precisely prove. Therefore, it is hereby agreed that the amount of such damages shall be the appropriate sum of liquidated damages.

7.26.1.1 When the Contractor fails to complete the Work or any portion of the Work within the time or times fixed in the contract or any extension thereof, it is agreed the Contractor shall pay liquidated damages to the HPHA in the amount of \$1,000 (one thousand dollars) per day, unless otherwise indicated in the Special Conditions.

7.26.1.2 If the Contractor fails to correct Punchlist deficiencies as required by Section 7.32, PROJECT ACCEPTANCE DATE, the HPHA will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the HPHA based upon the amount stated in GR 3 – COMPLETION AND LIQUIDATED DAMAGES of the General Requirements, Section 3.02, LIQUIDATED DAMAGES. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the Punchlist items are corrected and accepted by the Project Engineer.

7.26.1.3 If the Contractor fails to submit final documents as required by Section 7.33, FINAL SETTLEMENT OF CONTRACT, the HPHA will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the HPHA in the amount stated in the General Requirements. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the final documents are received by the Project Engineer.

7.26.1.4 The Project Engineer shall assess the total amount of liquidated damages in accordance with the amount of \$1,000 (one thousand dollars) per day, unless otherwise indicated in the Special Conditions, and provide written notice of such assessment to the Contractor.

7.26.2 ACCEPTANCE OF LIQUIDATED DAMAGES - The assessment of liquidated damages by the Project Engineer shall be accepted by the parties hereto as final, unless the Contractor delivers a written appeal of the Project Engineer's decision in accordance with Subsection 7.25.10, DECISION ON CLAIM/APEAL REQUIREMENTS. Any allowance of time or remission of charges or liquidated damages shall in no other manner affect the rights or obligations of the parties under this contract nor be construed to prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE. If the HPHA terminates the Contractor's right to proceed, the resulting damage will include such liquidated damages for such time as may be required for final completion of the work after the required contract completion date.

7.26.3 PAYMENTS FOR LIQUIDATED DAMAGES - Liquidated damages shall be deducted from monies due or that may become due to the Contractor under the contract or from other monies that may be due or become due to the Contractor from the HPHA.

7.27 TERMINATION OF CONTRACT FOR CAUSE (\$3-125-18 HAR)

7.27.1 DEFAULT - If the Contractor refuses or fails to perform the work, or any separable part thereof, with such diligence as will assure its completion within the time specified in this contract, or any extension thereof, fails to complete the work within such

time, or commits any other material breach of this contract, and further fails within seven (7) days after receipt of written notice from the Project Engineer to commence and continue correction of the refusal or failure with diligence and promptness, the Executive Director may, by written notice to the Contractor, declare the Contractor in breach and terminate the Contractor's right to proceed with the work or the part of the work as to which there has been delay or other breach of contract. In such event, the HPHA may take over the work and perform the same to completion, by contract or otherwise, and may take possession of, and utilize in completing the work, the materials, appliances, and plant as may be on the site of the work and necessary therefor. Whether or not the Contractor's right to proceed with the work is terminated, the Contractor and the Contractor's sureties shall be liable for any damage to the HPHA resulting from the Contractor's refusal or failure to complete the work within the specified time.

7.27.2 **ADDITIONAL RIGHTS AND REMEDIES** - The rights and remedies of the HPHA provided in this contract are in addition to any other rights and remedies provided by law.

7.27.3 **COSTS AND CHARGES**

7.27.3.1 All costs and charges incurred by the HPHA, together with the cost of completing the work under contract, will be deducted from any monies due or which would or might have become due to the Contractor had it been allowed to complete the work under the contract. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay the HPHA the amount of the excess.

7.27.3.2 In case of termination, the Executive Director shall limit any payment to the Contractor to the part of the contract satisfactorily completed at the time of termination. Payment will not be made until the work has satisfactorily been completed and the tax clearance required by Section 8.8, FINAL PAYMENT is submitted by the Contractor. Termination shall not relieve the Contractor or Surety from liability for liquidated damages.

7.27.4 **ERRONEOUS TERMINATION FOR CAUSE** - If, after notice of termination of the Contractor's right to proceed under this Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE** (§3-125-18 HAR) it is determined for any reason that good cause did not exist to allow the HPHA to terminate as provided herein, the rights and obligations of the parties shall be the same as, and the relief afforded the Contractor shall be limited to, the provisions contained in Section 7.28, **TERMINATION FOR CONVENIENCE**.

7.28 **TERMINATION FOR CONVENIENCE (§3-125-22 HAR)**

7.28.1 **TERMINATION** - The Executive Director may, when the interests of the HPHA so require, terminate this contract in whole or in part, for the convenience of the HPHA. The Executive Director shall give written notice of the termination to the Contractor specifying the part of the contract terminated and when termination becomes effective.

7.28.2 **CONTRACTOR'S OBLIGATIONS** - The Contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the Contractor will stop work to the extent specified. The Contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work subject to the HPHA's approval. The Executive Director may direct the Contractor to assign the Contractor's right, title, and interest under terminated orders or subcontracts to the HPHA. The Contractor must still

complete the work not terminated by the notice of termination and may incur obligations as necessary to do so.

7.28.3 **RIGHT TO CONSTRUCTION AND GOODS** - The Executive Director may require the Contractor to transfer title and delivery to the HPHA in the manner and to the extent directed by the Executive Director, the following:

7.28.3.1 Any completed work; and

7.28.3.2 Any partially completed construction, goods, materials, parts, tools, dies, jigs, fixtures, drawings, information, and contract rights (hereinafter called "construction material") that the Contractor has specifically produced or specially acquired for the performance of the terminated part of this contract.

7.28.3.3 The Contractor shall protect and preserve all property in the possession of the Contractor in which the HPHA has an interest. If the Executive Director does not elect to retain any such property, the Contractor shall use its best efforts to sell such property and construction material for the HPHA's account in accordance with the standards of Section 490:2-706, HRS.

7.28.4 **COMPENSATION**

7.28.4.1 Contractor shall submit a termination claim specifying the amounts due because of the termination for convenience together with cost or pricing data, submitted to the extent required by subchapter 15, chapter 3-122, HAR. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Executive Director may pay the Contractor, if at all, an amount set in accordance with Subsection 7.28.4.3.

7.28.4.2 The Executive Director and the Contractor may agree to a settlement provided the Contractor has filed a termination claim supported by cost or pricing data submitted as required and that the settlement does not exceed the total contract price plus settlement costs reduced by payments previously made by the HPHA, the proceeds of any sales of construction, supplies, and construction materials under Subsection 7.28.3.3 of this Section, and the contract price of the work not terminated.

7.28.4.3 Absent complete agreement, the Executive Director shall pay the Contractor the following amounts, less any payments previously made under the Contract.

(a) The cost of all contract work performed prior to the effective date of the notice of termination work plus a five percent (5%) markup on the actual direct costs, including amounts paid to subcontractor(s), less amounts previously paid or to be paid for completed portions of such work; provided, however, that if it appears that the Contractor would have sustained a loss if the entire contract would have been completed, no markup shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss. No anticipated profit or consequential damage will be due or paid.

(b) Subcontractors shall be paid a markup of ten percent (10%) on their direct job costs incurred to the date of termination. No anticipated profit or consequential damage will be due or paid to any subcontractor. These costs must not include payments made to the Contractor for subcontract work during the contract period.

(c) In any case, the total sum to be paid the Contractor shall not exceed the total contract price reduced by the amount of any sales of construction supplies, and construction materials.

7.28.4.4 Costs claimed, agreed to, or established by the HPHA shall be in accordance with chapter 3-123, HAR.

7.29 CORRECTING DEFECTS - If the Contractor fails to commence to correct any defects of any nature, within ten (10) working days after the correction thereof has been requested in writing by the HPHA, and thereafter to expeditiously complete the correction of said defects, the Project Engineer may without further notice to the Contractor or surety and without termination of contract, correct the defects and deduct the cost thereof from the contract price.

7.30 FINAL CLEANING - Before final inspection of the work, the Contractor shall clean all ground occupied by the Contractor in connection with the Work of all rubbish, excess materials, temporary structures and equipment, and all parts of the work must be left in a neat and presentable condition to the satisfaction of the Project Engineer. However, the Contractor shall not remove any warning and directional signs prior to the formal acceptance by the Project Engineer. Full compensation for final cleaning will be included in the prices paid for the various items of work or lump sum bid, as the case may be, and no separate payment will be made therefor.

7.31 SUBSTANTIAL COMPLETION AND FINAL INSPECTION - Before the HPHA accepts the project as being completed, unless otherwise stipulated by the Project Engineer the following procedure shall be followed:

7.31.1 SUBSTANTIAL COMPLETION

7.31.1.1 The Contractor and its subcontractors shall inspect the project to confirm whether the Project is Substantially Complete. This inspection effort shall include the testing of all equipment and providing a Punchlist that identifies deficiencies which must be corrected. Contractor shall make the corrections and if required repeat the procedure. Also, the Contractor shall schedule final Building, Plumbing, Electrical, Elevator, Fire and other required inspections and obtain final approvals.

(a) When in compliance with the above requirements, the Contractor shall notify the Project Engineer in writing that project is Substantially Complete and ready for a Final Inspection. Along with the Substantial Completion notification, the Contractor shall provide its Punchlist(s) with the status of the deficiencies and dates when the deficiencies were corrected. The Project Inspector and / or the Project Engineer shall make a preliminary determination whether project is Substantially Complete.

(b) If the Project is not Substantially Complete, the Project Engineer shall inform the Contractor. The Contractor shall identify deficiencies which must be corrected, update its Punchlist, make the necessary corrections and repeat the previous step. After completing the necessary work, the Contractor shall notify the Project Engineer in writing that Punchlist deficiencies have been corrected and the project is ready for a Final Inspection.

(c) If the Project is Substantially Complete, the Project Engineer shall schedule a Final Inspection within fifteen (15) days of the Contractor's notification letter or as otherwise determined by the Project Engineer.

7.31.1.2 In addition, and to facilitate closing of the project, the Contractor shall also proceed to obtain the following closing documents (where applicable) prior to the Final Inspection:

- (a) Field-Posted As-Built Drawings;
- (b) Maintenance Service Contract and two (2) copies of a list of all equipment;
- (c) Five (5) sets of operating and maintenance manuals;
- (d) Air conditioning test and balance reports; and
- (e) Any other final submittal required by the Contract.

7.31.2 **FINAL INSPECTION** - If at the Final Inspection the Project Engineer determines that all work is completed, the Project Engineer shall notify the Contractor in accordance with Section 7.32, **PROJECT ACCEPTANCE DATE**. Should there be remaining deficiencies which must be corrected the Contractor shall provide an updated Punchlist to the Project Engineer, within five (5) days from the Final Inspection Date. The Contractor shall make the necessary corrections.

7.31.2.1 The Project Engineer shall confirm the list of deficiencies noted by the Contractor's punchlist(s) and will notify the Contractor of any other deficiencies that must be corrected before final settlement.

7.31.3 The Project Engineer may add to or otherwise modify the Punchlist from time to time. The Contractor shall take immediate action to correct the deficiencies.

7.31.4 **REVOKING SUBSTANTIAL COMPLETION** - At any time before final Project Acceptance is issued the Project Engineer may revoke the determination of Substantial Completion if the Project Engineer finds it was not warranted. The Project Engineer shall notify the Contractor in writing with the reasons and outstanding deficiencies negating the declaration. Once notified, the Contractor shall make the necessary corrections and repeat the required steps noted in Subsections 7.31.1 and 7.31.2.

7.32 PROJECT ACCEPTANCE DATE

7.32.1 If upon Final Inspection, the Project Engineer finds that the project has been satisfactorily completed in compliance with the contract, the Project Engineer shall declare the project completed and accepted and will notify the Contractor in writing of the acceptance by way of the Project Acceptance Notice.

7.32.2 **PROTECTION AND MAINTENANCE** - After the Project Acceptance Date, the Contractor shall be relieved of maintaining and protecting the work except that this does not hold true for those portions of the work which have not been accepted, including Punchlist deficiencies. The HPHA shall be responsible for the protection and maintenance of the accepted facility.

7.32.3 The date of Project Acceptance shall determine:

7.32.3.1 End of Contract Time;

7.32.3.2 Commencement of all guaranty periods except as noted in Section 7.34, **CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS**; and

7.32.3.3 Commencement of all maintenance services except as noted in Section 7.34, **CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS**.

7.32.4 PUNCHLIST REQUIREMENTS – If a Punchlist is required under Section 7.31, SUBSTANTIAL COMPLETION AND FINAL INSPECTION, the Project Acceptance Notice will include the Project Engineer's Punchlist and the date when correction of the deficiencies must be completed.

7.32.5 Upon receiving the Punchlist, the Contractor shall promptly devote the required time, labor, equipment, materials and incidentals necessary to correct the deficiencies expeditiously.

7.32.6 For those items of work that cannot be completed by the established date, the Contractor shall submit a schedule in writing to the Project Engineer for approval along with documentation to justify the time required, no later than five (5) working days before the date stipulated for completion of the Punchlist work. A Proposed schedule submitted after the five (5) day period will not be considered.

7.32.7 FAILURE TO CORRECT DEFICIENCIES – After the Contract Completion Date, or any extension thereof, if the Contractor fails to correct the deficiencies within the established date or agreed to Punchlist completion date, the Project Engineer shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.

7.32.8 If the Contractor fails to correct the deficiencies and complete the work by the established or agreed to date, the HPHA also reserves the right to correct the deficiencies by whatever method it deems necessary and deduct the cost from the final payment due the Contractor.

7.32.9 The Contractor may further be prohibited from bidding in accordance with Section 2.12, DISQUALIFICATION OF BIDDERS. In addition, assessment of damages shall not prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

7.33 FINAL SETTLEMENT OF CONTRACT

7.33.1 The contract will be considered settled after the project acceptance date and when the following items have been satisfactorily submitted, where applicable:

7.33.1.1 Necessary Submissions in addition to the items noted under Subsection 7.31.1.2.

7.33.1.2 All written guarantees required by the contract.

7.33.1.3 Complete and certified weekly payrolls for the Contractor and its Subcontractor(s).

7.33.1.4 Certificate of Plumbing and Electrical Inspection.

7.33.1.5 Certificate of Building Occupancy.

7.33.1.6 Certificate for Soil Treatment and Wood Treatment.

7.33.1.7 Certificate of Water System Chlorination.

7.33.1.8 Certificate of Elevator Inspection, Boiler and Pressure Pipe installation.

7.33.1.9 All other documents required by the Contract.

7.33.2 FAILURE TO SUBMIT CLOSING DOCUMENTS – The Contractor shall submit the final Payment Application and the above applicable closing documents within sixty (60) days from the date of Project Acceptance or the agreed to Punchlist completion date. Should the Contractor fail to comply with these requirements, the Executive Director may terminate the Contract for cause. The pertinent provisions of Section 7.27, TERMINATION OF CONTRACT FOR CAUSE shall be applicable.

7.33.3 In addition, should the Contractor fail to furnish final closing documents within the required time period, the Project Engineer shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.

7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK; RISK OF LOSS

7.34.1 Until the establishment of the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall take every necessary precaution against injury or damage to any part of the work caused by the perils insured by an All Risk policy, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work occasioned by the perils insured by an All Risk policy before the date of final acceptance and shall bear the risk and expense thereof.

7.34.2 After the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall be relieved of maintaining and protecting the work except for those portions of the work which have not been accepted including Punchlist deficiencies.

7.34.3 The risk of damage to the work from any hazard or occurrence that may be covered by a required Property Insurance policy is that of the Contractor, unless such risk of loss is placed elsewhere by express language in the Contract Documents. No claims for any loss or damage shall be recognized by the HPHA, nor will any such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.

7.35 GUARANTEE OF WORK

7.35.1 In addition to any required manufacturers warranties, all work and equipment shall be guaranteed by the Contractor against defects in materials, equipment or workmanship for one year from the Project Acceptance Date or as otherwise specified in the Contract Documents.

7.35.2 REPAIR OF WORK – If, within any guarantee period, repairs or changes are required in connection with the guaranteed work, which in the opinion of the Project Engineer is necessary due to materials, equipment or workmanship which are inferior, defective or not in accordance with the terms of the Contract, the Contractor shall within five (5) working days and without expense to the HPHA commence to:

7.35.2.1 Place in satisfactory condition in every instance all such guaranteed work and correct all defects therein; and

7.35.2.2 Make good and repair or replace to new or pre-existing condition all damages to the building, facility, work or equipment or contents thereof, resulting from such defective materials, equipment or installation thereof.

7.35.3 MANUFACTURER'S AND INSTALLER'S GUARANTEE - Whenever a manufacturer's or installer's guarantee on any product specified in the respective Specification sections, exceeds one year, this guarantee shall become part of this contract in addition to the Contractor's guarantee. Contractor shall complete the guarantee forms in the

name of the HPHA and submit such forms to the manufacturer within such time required to validate the guarantee. Contractor shall submit to the HPHA a photocopy of the completed guarantee form for the HPHA's record as evidence that such guarantee form was executed by the manufacturer.

7.35.4 If a defect is discovered during a guarantee period, all repairs and corrections to the defective items when corrected shall again be guaranteed for the original full guarantee period. The guarantee period shall be tolled and suspended for all work affected by the defect. The guarantee period for work affected by the defect shall restart for its remaining duration upon confirmation by the Project Engineer that the deficiencies have been repaired or remedied.

7.36 WORK OF AND CHARGES BY UTILITIES

7.36.1 The Contractor shall be responsible for scheduling and coordinating the work with the utility companies and applicable Governmental agencies for permanent service installation and connections or modifications to existing utilities. The Contractor shall make available all portions of the work necessary for the utility companies to do their work. The HPHA shall not bear the risk of any damage to the contract work caused by any utility company, and work of repairing such damage and delay costs must be resolved between the Contractor and the utility company and their insurers.

7.36.2 Unless stated as an allowance item to be paid by the Contractor, the HPHA will pay the utility companies and applicable governmental agencies directly for necessary modifications and connections. Contractor charges for overhead, supervision, coordination, profit, insurance and any other incidental expenses shall be included in the Contractor's Bid whether the utility is paid directly by the HPHA or by an allowance item in the Contract.

7.37 RIGHT TO AUDIT RECORDS

7.37.1 The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor or prospective subcontractor which are related to the cost or pricing data, and a State contract, including subcontracts, other than a firm fixed-price contract. The books and records shall be maintained by the Contractor and subcontractor(s) for a period of four (4) years from the date of final payment under the Contract.

7.37.2 The Contractor shall ensure that its subcontractors comply with this requirement and shall bear all costs (including attorney's fees) of enforcement in the event of its subcontractor's failure or refusal to fully cooperate.

7.37.3 Additionally, Sections 231-7, 235-108, 237-39 and other HRS chapters through reference, authorize the Department of Taxation to audit all taxpayers conducting business within the State. Contractors must make available to the Department of Taxation all books and records necessary to verify compliance with the tax laws.

7.38 RECORDS MAINTENANCE, RETENTION AND ACCESS

7.38.1 The Contractor and any subcontractor whose contract for services is valued at \$25,000 (twenty five thousand) or more shall, in accordance with generally acceptable accounting practices, maintain fiscal records and supporting documents and related files, papers, and reports that adequately reflect all direct and indirect expenditures and management and fiscal practices related to the Contractor and subcontractor's performance of services under this Contract.

7.38.2 The representative of the HPHA, the Executive Director, the Attorney General, (the Federal granting agency, the Comptroller General of the United States, and any of their authorized representatives when federal funds are utilized), and the Legislative Auditor of the State of Hawaii shall have the right of access to any book, document, paper, file, or other record of the Contractor and any subcontractor that is related to the performance of services under this Contract in order to conduct an audit or other examination and /or to make copies, excerpts and transcripts for the purposes of monitoring and evaluating the Contractor and subcontractor's performance of services and the Contractor and subcontractor's program, management, and fiscal practices to assure the proper and effective expenditure of funds and to verify all costs associated with any claims made under this Contract.

7.38.3 The right of access shall not be limited to the required retention period but shall last as long as the records are retained. The Contractor and subcontractor shall maintain and retain all books and records related to the Contractor and subcontractor's performance of services under this Contract, including any cost or pricing data for three (3) years from the date of final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the books and records has been started before the expiration of the three (3) year period, the Contractor and subcontractors shall retain the books and records until completion of the action and resolution of all issues that arise from it, or until the end of the three (3) year retention period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any subcontractor.

7.39 COST OR PRICING DATA - Cost or pricing data must be submitted to the Agency purchasing officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for Contracts awarded pursuant to competitive sealed bid procedures.

If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.

7.39.1 AUDIT OF COST OR PRICING DATA - When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.

7.40 CONFIDENTIALITY OF MATERIAL

7.40.1 All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.

7.40.2 All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.

7.41 PUBLICITY - The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any State employee, including the head of the purchasing agency, the Chief Procurement Officer, the Executive Director, the Agency procurement

officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR's brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.

7.42 OWNERSHIP RIGHTS AND COPYRIGHT - The STATE shall have complete ownership of all material, both finished and unfinished which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.

7.43 GOVERNING LAW - The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.

7.44 SEVERABILITY - In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.

7.45 WAIVER - The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract, shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE's right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the Procurement Rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE's rights or the CONTRACTOR's obligations under the Procurement Rules or statutes.

END OF ARTICLE 7

ARTICLE 8 - MEASUREMENT AND PAYMENT

8.1 MEASUREMENT OF QUANTITIES

8.1.1 All work completed under the Contract shall be measured by the Project Engineer according to United States standard measures, or as stated in this Contract. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract shall conform to good engineering practice. These measurements shall be considered correct and final unless the Contractor has protested same to the Project Engineer and has demonstrated the existence of an error by actual physical measurement before the work has progressed in a manner which would prohibit a proper check.

8.1.2 All measurements of the area of the various surfaces, pavement and base courses will be made in the horizontal projection of the actual surface and no deductions will be made for fixtures or structures having an area of nine (9) square feet or less. All measurements of headers, curbs, fences and any other type of construction which is to be paid for by its length will be made in the horizontal projection of the actual driven length from toe to top of cutoff, except where slope exceeds ten percent (10%) and for piles, which will be by actual length. All materials which are specified for measurement by the cubic yard "Loose Measurement" or "Measured in the Vehicle" shall be hauled in approved vehicles and measured therein at the point of delivery. Approved vehicles for this purpose may be of any type or size satisfactory to the Project Engineer, provided that the body is of such type that the actual contents may be readily and accurately determined. Unless all approved vehicles on a job are of a uniform capacity each approved vehicle must bear a plainly legible identification mark indicating the specific approved capacity. The Inspector may reject all loads not hauled in such approved vehicles.

8.2 NO WAIVER OF LEGAL RIGHTS - The Project Engineer shall not be precluded or estopped by any measurements, estimate or certificate made either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing that any such measurement estimate or certificate is untrue or incorrectly made, or rejecting the work or materials that do not conform in fact to the contract. The Project Engineer shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and its sureties such damages as the HPHA may sustain by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by the Project Engineer or any representative of the Project Engineer, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, or any possession taken by the Project Engineer, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damage herein provided. A waiver of any notice requirement or breach of the contract shall not be held to be a waiver of any other notice requirement or subsequent breach.

8.3 PAYMENT FOR ADDITIONAL WORK

8.3.1 Additional work as defined in Section 4.2, CHANGES, when ordered, shall be paid for as defined in Section 4.4, PRICE ADJUSTMENT by a duly issued change order in accordance with the terms provided therein.

8.3.2 On credit proposals and proposals covering both increases and decreases, the application of overhead and profit shall be on the net change in direct costs for the performance of the work.

8.3.3 When payment is to be made for additional work directed by a Field Order, the total price adjustment as specified in the Field Order or if not specified therein for the work contained in the related change order shall be considered full compensation for all materials, labor, insurance, taxes, equipment use or rental and overheads, both field and home office including extended home and branch office overhead and other related delay impact costs.

8.3.4 **FORCE ACCOUNT METHOD** - When, for the convenience of the HPHA, payment is to be made by the Force Account method, all work performed or labor and materials and equipment furnished shall be paid for as described below. Payment by the Force Account method will not alter any rights, duties and obligations under the contract.

8.3.4.1 **LABOR** - For all hourly workers, the Contractor will receive the rate of wage including fringe benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work, which shall be agreed upon in writing before beginning work for each and every hour that said labor is actually engaged in said work.

(a) All markups for overhead and profit shall be added subject to limitations established in Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT**.

(b) No allowance for overtime compensation will be given without the written approval of the Project Engineer prior to performance of such work.

8.3.4.2 **INSURANCE AND TAXES** - The Contractor and subcontractor(s) will also receive the actual additional costs paid for property damage, liability, worker's compensation insurance premiums, State unemployment contributions, Federal unemployment taxes, social security and Medicare taxes.

8.3.4.3 **MATERIALS** - For materials accepted by the Project Engineer and used, the Contractor and subcontractor(s) shall receive the actual cost of such materials delivered and incorporated into work, plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT**.

8.3.4.4 **SUBCONTRACTORS** - Subcontractor costs shall be the actual costs of the subcontractor marked up as defined in this Section 8.3, **PAYMENT FOR ADDITIONAL WORK** plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT**.

8.3.4.5 **EQUIPMENT**

(a) For machinery or special equipment (other than small tools as herein defined in Subsection 8.3.4.5.(h) owned or leased by the Contractor or a related entity, the use of which has been authorized by the Project Engineer:

(1) The Contractor will be paid at the per-hour rental rates based on the monthly rate established for said machinery or equipment in the then-current edition of the Rental Rate Blue Book for Construction Equipment including the estimated operating cost per hour and regional correction provided therein.

(2) If no rate is listed for a particular kind, type or size of machinery or equipment, then the monthly, hourly rates shall be as agreed upon in writing by the Contractor and the Project Engineer prior to the use of said machinery or equipment. If

there is no agreement, the Project Engineer will set a rate. The Contractor may contest the rate pursuant to Section 7.25, DISPUTES AND CLAIMS.

(3) Rental rates which are higher than those specified in the aforesaid Rental Rate Blue Book publication may be allowed where such higher rates can be justified by job conditions such as work in water and work on lava, etc. Request for such higher rates shall be submitted in writing to the Project Engineer for approval prior to the use of the machinery or equipment in question.

(b) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity specifically for the Force Account work, the use of which has been authorized by the Project Engineer, the Contractor will be paid the actual rental cost for the machinery or equipment, including mobilization and demobilization costs. A receipt from the equipment supplier shall be submitted to the Project Engineer.

(c) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity for use in the project, but which will also be used for the Force Account work, the use of which has been authorized by the Project Engineer, the Contractor will be paid the actual rental cost for the machinery or equipment. No additional mobilization and demobilization costs will be paid. A receipt from the equipment supplier shall be submitted to the Project Engineer.

(d) The rental rate for trucks not owned by the Contractor shall be those as established under the Hawaii State Public Utilities Commission, which will be paid for as an equipment item pursuant to Subsection 8.3.4.5, EQUIPMENT. Rental rates for Contractor-owned trucks not listed in the Rental Rate Blue Book shall be agreed upon in writing by the Contractor and Project Engineer prior to the use of said trucks. If there is no agreement, the Project Engineer shall set the rate. The Contractor may contest the rate pursuant to Section 7.25, DISPUTES AND CLAIMS.

(e) The rental period shall begin at the time equipment reaches the site of work, shall include each day that the machinery or equipment is at the site of the work and shall terminate at the end of the day on which the equipment is no longer needed. In the event the equipment must standby due to work being delayed or halted by reason of design, traffic, or other related problems uncontrollable by the Contractor, excluding Saturdays, Sundays and Legal Holidays, unless the equipment is used to perform work on such days, the rental shall be two (2) hours per day until the equipment is no longer needed.

(1) The rental time to be paid will be for the time actually used. Any hours or operation in excess of eight (8) hours in any one (1) day must be approved by the Project Engineer prior to the performance of such work.

(2) Rental time will not be allowed or credited for any day on which machinery or equipment is inoperative due to its breakdown. On such days, the Contractor will be paid only for the actual hours, if any, that the machinery or equipment was in operation.

(3) In the event the Force Account work is completed in less than eight (8) hours, equipment rental shall nevertheless be paid for a minimum eight (8) hours.

(4) For the purpose of determining the rental period the continuous and consecutive days shall be the normal eight (8) hour shift work day, Monday through Friday excluding legal holidays. Any work day to be paid less than eight (8) hours shall not be considered as continuous, except for equipment removed from rental for fuel and lubrication.

(5) No additional premium beyond the normal rates used will be paid for equipment over eight (8) hours per day or forty (40) hours per week.

(f) All rental rates for machinery and equipment shall include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs, maintenance, tire wear, depreciation, storage, and all other incidentals.

(g) All machinery and equipment shall be in good working condition and suitable for the purpose for which the machinery and equipment is to be used.

(h) Individual pieces of equipment or tools having a replacement value of \$2,000 (two thousand dollars) or less, whether or not consumed by use, shall be considered to be small tools and included in the allowed markup for overhead and profit and no separate payment will be made therefor.

(i) The total of all Force Account rental charges accrued over the duration of the contract for a specific item of equipment shall not exceed the replacement cost of that equipment.

(1) The Contractor shall provide the cost of replacement to the Project Engineer prior to using the equipment. If the Project Engineer does not agree with the replacement cost, the Project Engineer shall set the replacement cost. The Contractor may contest the replacement cost pursuant to Section 7.25, DISPUTES AND CLAIMS.

(j) Should the item of equipment be rented from an unrelated entity, the rental cost will be treated as an equipment cost under Subsection 8.3.4.5, EQUIPMENT.

(k) Transportation and/or Mobilization: The following provisions shall govern in determining the compensation to be paid to the Contractor for use of equipment or machinery on the Force Account method:

(1) The location from which the equipment is to be moved or transported shall be approved by the Project Engineer.

(2) Where the equipment must be transported to the site of the Force Account work, the HPHA will pay the reasonable cost of mobilizing and transporting the equipment, including its loading and unloading, from its original location to the site of Force Account work. Upon completion of the work the HPHA will pay the reasonable cost of mobilizing and transporting the equipment back to its original location or to another location, whichever cost is less.

(3) The cost of transporting the equipment shall not exceed the rates established by the Hawaii State Public Utilities Commission. If such rates are nonexistent, then the rates will be determined by the Project Engineer based upon the prevailing rates charged by established haulers within the locale.

(4) Where the equipment is self-propelled, the HPHA will pay the cost of moving the equipment by its own power from its original location to the site of the Force Account work. Upon completion of the work the HPHA will pay the reasonable cost of moving of the Equipment back to its original or another location, whichever cost is less.

(5) At the discretion of the Project Engineer, when the Contractor desires to use such equipment for other than Force Account work, the costs of mobilization and transportation shall be prorated between the Force Account and non- Force Account work.

(i) Pickup trucks, vans, storage trailers, unless specifically rented for the Force Account work, shall be considered incidental to the Force Account work and the costs therefor are included in the markup allowed under Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

8.3.4.6 STATE EXCISE (GROSS INCOME) TAX AND BOND - A sum equal to the current percentage rate for the State excise (Gross Income) tax on the total sum determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 above, and the bond premium shall be added as compensation to the Contractor. The actual bond premium not to exceed one percent (1%) shall be added to items covered by Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 when applicable.

(a) The compensation as determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3, 8.3.4.4 and 8.3.4.5 above shall be deemed to be payment in full for work paid on a Force Account basis.

8.3.4.7 RECORDS - The Contractor and the Project Engineer shall compare records of the labor, materials and equipment rentals paid by the Force Account basis at the end of each day. These daily records, if signed by both parties, shall thereafter be the basis for the quantities to be paid for by the Force Account method. The Contractor shall not be entitled to payment for Force Account records not signed by the Project Engineer.

8.3.4.8 STATEMENTS - No payment will be made for work on a Force Account basis until the Contractor has submitted to the Project Engineer, duplicate itemized statements of the cost of such Force Account work detailed as follows:

(a) Laborers - Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman and also the amount of fringe benefits payable if any.

(b) Equipment - Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.

(c) Materials:

(1) Quantities of materials, prices and extensions.

(2) Costs of transporting materials, if such cost is not reflected in the prices of the materials.

(3) Statements shall be accompanied and supported by receipted invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractors shall submit an affidavit certifying that such materials were taken from stock and that the amount claimed represents the actual cost to the Contractor.

(d) Insurance - Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.

8.4 PROGRESS AND/OR PARTIAL PAYMENTS

8.4.1 PROGRESS PAYMENTS - The Contractor will be allowed progress payments on a monthly basis upon preparing the Monthly Payment Application forms and

submitting the originals to the Project Engineer. The monthly payment shall be based on the items of work satisfactorily completed and the value thereof at unit prices and/or lump sum prices set forth in the contract as determined by the Project Engineer and will be subject to compliance with Section 7.9, PAYROLLS AND PAYROLL RECORDS.

8.4.1.1 ORIGINAL INVOICES REQUIRED - All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.

8.4.1.2 SUBJECT TO AVAILABLE FUNDS - Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.

8.4.2 In the event the Contractor or any Subcontractor fails to submit certified copies of payrolls in accordance with the requirements of Section 7.9, PAYROLLS AND PAYROLL RECORDS, the Project Engineer may retain the amount due for items of work for which payroll affidavits have not been submitted on a timely basis notwithstanding satisfactory completion of the work until such records have been duly submitted. The Contractor shall not be due any interest payment for any amount thus withheld.

8.4.3 PARTIAL PAYMENT FOR MATERIALS - The Contractor will also be allowed partial payments to the extent of ninety percent (90%) of the manufacturer's, supplier's, distributor's or fabricator's invoice cost of accepted materials to be incorporated in the work on the following conditions:

8.4.3.1 The materials are delivered and properly stored at the site of the Work; or

8.4.3.2 For special items of materials accepted by the Project Engineer, the materials are delivered to the Contractor or subcontractor(s) and properly stored in an acceptable location within a reasonable distance to the site of the Work.

8.4.4 Partial payments shall be made only if the Project Engineer finds that:

8.4.4.1 The Contractor has submitted bills of sale for the materials or otherwise demonstrates clear title to such materials.

8.4.4.2 The materials are insured for their full replacement value to the benefit of the HPHA against theft, fire, damages incurred in transportation to the site, and other hazards.

8.4.4.3 The materials are not subject to deterioration.

8.4.4.4 In case of materials stored off the project site, the materials are not commingled with other materials not to be incorporated into the project.

8.4.5 FEDERAL FUNDS - If this Contract is payable in whole or in part from federal funds, Contractor agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the Contractor shall be paid only from such funds received from the federal government, and shall not be paid from any other funds.

8.5 PROMPT PAYMENT (\$3-125-23 HAR)

8.5.1 Any money, other than retainage, paid to the CONTRACTOR shall be dispersed to subcontractors within ten days after receipt of the money in accordance with the

terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and

8.5.2 Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.

8.5.3 BONA FIDE DISPUTES - The existence of a bona fide dispute with a subcontractor or material supplier shall not release the Contractor of its prompt payment obligations as to all sums due that are not directly affected by such dispute.

8.5.4 FILING NON-PAYMENT COMPLAINT - Subcontractors and material suppliers may file in writing a complaint with the Executive Director regarding non-payment by the Contractor. Such complaint shall include:

8.5.4.1 The amount past due for work performed and already paid for by the HPHA;

8.5.4.2 That all the terms, conditions or requirements of its subcontract have been met; and

8.5.4.3 That no bona fide dispute over its performance exists. The HPHA will investigate the validity of the complaint.

8.5.5 The HPHA may withhold from future progress payments amounts to cover any sums paid to the Contractor for work performed by a subcontractor if the HPHA finds that the subcontractor complaint regarding non-payment by the Contractor has merit.

8.5.6 If the Project Engineer determines that the Contractor failed to make prompt payment required to a subcontractor or material supplier with whom it has no bona fide dispute, the Project Engineer shall inform the Contractor of the findings and request the Contractor make payment accordingly. If the Contractor does not act promptly, the Project Engineer shall take appropriate action as allowed under this Contract and/or refer the matter to the Contractor Licensing Board for appropriate action under Section 444-17, Hawaii Revised Statutes regarding the Revocation, Suspension and Renewal of (Contractor) Licenses and/or initiate a petition for debarment of the Contractor from bidding on other HPHA jobs.

8.6 RETAINAGE

8.6.1 The HPHA will retain five percent (5%) of the total amount of progress and / or partial payments until after completion of the entire Contract in an acceptable manner at which time this balance, less any previous payments, will be certified and paid to the Contractor. After fifty percent (50%) of the work is completed, and if progress is satisfactory, the Project Engineer at its sole discretion may elect not to withhold further retainage. If progress is not satisfactory, the HPHA may continue to withhold as retainage sums not exceeding five percent (5%) of the amount earned.

8.6.2 The retainage shall not include sums deducted as liquidated damages from monies due or that may become due the Contractor under the Contract.

8.6.3 Contractor may withdraw from time to time the whole or any portion of the sum retained after endorsing over to the HPHA and depositing with the HPHA any general obligation bond of the State or its political subdivisions suitable to the HPHA but in no case with a face value less than the value established by law of the amount to be withdrawn. The

HPHA may sell the bond and use the proceeds therefrom in the same way as it may use monies directly retained from progress payments or the final payment.

8.7 WARRANTY OF CLEAR TITLE - The Contractor warrants and guarantees that all work and materials covered by progress or partial payments made thereon shall be free and clear of all liens, claims, security interests or encumbrances, and shall become the sole property of the HPHA. This provision shall not, however, be construed as an acceptance of the work nor shall it be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the HPHA to require the fulfillment of all the items of the Contract.

8.7.1 LIENS AND WARRANTIES - Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.

8.8 FINAL PAYMENT

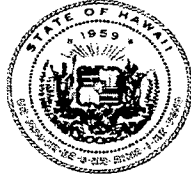
8.8.1 Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.

8.8.2 Sums necessary to meet any claims of any kind by the HPHA may be retained from the sums due the Contractor until said claims have been fully and completely discharged or otherwise satisfied.

8.9 STATE'S RIGHT TO OFFSET - The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other Contracts or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this Subsection, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.

END OF ARTICLE 8

LINDA LINGLE
GOVERNOR



CHAD K. TANIGUCHI
EXECUTIVE DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
HAWAII PUBLIC HOUSING AUTHORITY
1002 NORTH SCHOOL STREET
P.O. BOX 17907
Honolulu, Hawaii 96817

BARBARA E. ARASHIRO
EXECUTIVE ASSISTANT

ADDENDUM NO. 1

TO THE
PLANS AND SPECIFICATIONS
FOR
FURNISHING LABOR AND MATERIALS
REQUIRED FOR

**PHYSICAL IMPROVEMENTS
AT
KAHEKILI TERRACE**

HA 1-17

2015 HOLOWAI PLACE
WAILUKU, MAUI, HAWAII

TAX MAP KEY NO: (2) 3-4-33: 23

HPHA JOB NO. 07-064-117-S/F

IFB-CMS-2009-33

January 19, 2010

The items listed hereinafter are hereby made a part of the contract for the above project and shall govern the work, taking precedence over previously issued plans and specifications governing the items mentioned.

A. SPECIFICATIONS

1. INVITATION (NOTICE) TO BIDDERS

a. Delete paragraph five:

An INTENT TO BID is required and must be received by the HPHA at 1002 North School Street, Honolulu, Hawaii no later than **4:00 p.m., HST, on January 25, 2010**. Intent forms are included in the bidding documents and are available at the above addresses. The Notice may be filed by fax at (808) 832-6030. Bidders must possess a valid State of Hawaii Contractor's "B" License to be eligible to bid.

Insert paragraph five:

An INTENT TO BID is required and must be received by the HPHA at 1002 North School Street, Honolulu, Hawaii no later than **ten (10) calendar days prior to the date designated for opening of bids**. Intent forms are included in the bidding documents and are available at the above address. The Notice may be filed by fax at (808) 832-6030. Bidders must possess a valid State of Hawaii Contractor's "B" License to be eligible to bid.

2. INVITATION (NOTICE) TO BIDDERS

a. Delete paragraph six:

Bidders shall comply with all requirements of the bidding documents. Written questions shall be directed to Richard Speer (808) 832-5326 or at the above Honolulu address and fax number. No questions will be considered less than fifteen (15) calendar days prior to the bid opening.

Insert paragraph six:

Bidders shall comply with all requirements of the bidding documents. Written questions shall be directed to Richard Speer (808) 832-5326 or at the above Honolulu address and fax number. No questions will be considered less than ten (10) calendar days prior to the bid opening.

3. TECHNICAL SPECIFICATION

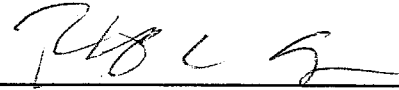
a. ADD the attached Sections:

Spec Section 15060 pages 5-6
Spec Section 15082 pages 1-12
Spec Section 15110 pages 1-7
Spec Section 15126 pages 1-5
Spec Section 15140 pages 1-5
Spec Section 15145 pages 1-4
Spec Section 15486 pages 1-4

B. DRAWINGS

No revisions.

Approved by:



Rick T. Sogawa
Acting Procurement Officer



1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified above for individual pipe hangers.
 2. Field fabricate from ASTM A 36/A 36M, steel shapes selected for loads being supported. Weld steel according to AWS D1.1.
- C. Metal Framing System Installation: Arrange for grouping of parallel runs of piping and support together on field-assembled metal framing systems.
- D. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.
- E. Fastener System Installation:
1. Install powder-actuated fasteners in concrete after concrete is placed and completely cured. Use operators that are licensed by powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
 2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.
- F. Install hangers and supports complete with necessary inserts, bolts, rods, nuts, washers, and other accessories.
- G. Equipment Support Installation: Fabricate from welded-structural-steel shapes.
- H. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.
- I. Load Distribution: Install hangers and supports so piping live and dead loads and stresses from movement will not be transmitted to connected equipment.
- J. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and so maximum pipe deflections allowed by ASME B31.1 (for power piping) and ASME B31.9 (for building services piping) are not exceeded.
- K. Insulated Piping: Comply with the following:
1. Attach clamps and spacers to piping.
 - a. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.
 - b. Do not exceed pipe stress limits according to ASME B31.1 for power piping and ASME B31.9 for building services piping.
 2. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

3.03 METAL FABRICATIONS

- A. Cut, drill, and fit miscellaneous metal fabrications for trapeze pipe hangers and equipment supports.
- B. Fit exposed connections together to form hairline joints. Field weld connections that cannot be shop welded because of shipping size limitations.
- C. Field Welding: Comply with AWS D1.1 procedures for shielded metal arc welding, appearance and quality of welds, and methods used in correcting welding work, and with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. Finish welds at exposed connections so no roughness shows after finishing and contours of welded surfaces match adjacent contours.

3.04 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.

3.05 PAINTING

- A. Touch Up: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
 - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils.
- B. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

SECTION 15082 - PIPE INSULATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

1. Insulation Materials:
 - a. Flexible elastomeric.
 - b. Polyisocyanurate.
 - c. Fiber Glass
2. Insulating cements.
3. Adhesives.
4. Mastics.
5. Sealants.
6. Factory-applied jackets.
7. Field-applied jackets.
8. Tapes.
9. Securements.
10. Corner angles.

1.02 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings:

1. Detail application of protective shields, saddles, and inserts at hangers for each type of insulation and hanger.
2. Detail insulation application at elbows, fittings, flanges, valves, and specialties for each type of insulation.
3. Detail application of field-applied jackets.
4. Detail application at linkages of control devices.

1.03 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Insulation and related materials shall have fire-test-response characteristics indicated, as determined by testing identical products per ASTM E 84, by a testing and inspecting agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing and inspecting agency.

1. Insulation Installed Indoors: Flame-spread index of 25 or less, and smoke-developed index of 50 or less.
2. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

PART 2 - PRODUCTS

2.01 INSULATION MATERIALS

- A. Comply with requirements in Part 3 schedule articles for where insulating materials shall be applied.
- B. Products shall not contain asbestos, lead, mercury, or mercury compounds.
- C. Foam insulation materials shall not use CFC or HCFC blowing agents in the manufacturing process.
- D. Flexible elastomeric thermal insulation is not suitable for temperatures lower than minus 70 deg F (minus 57 deg C) and higher than 220 deg F (104 deg C).
 - 1. Flexible Elastomeric: Closed-cell, sponge- or expanded-rubber materials. Comply with ASTM C 534, Type I for tubular materials and Type II for sheet materials. Field Applied - Aluminum
 - 2. Products: Subject to compliance with requirements, provide one of the following:
 - a. Aeroflex USA Inc.; Aerocel.
 - b. Armacell LLC; AP Armaflex.
 - c. RBX Corporation; Insul-Sheet 1800 and Insul-Tube 180.
- E. Polyisocyanurate: Rigid modified polyurethane modified polyisocyanurate insulation with Saran Vapor Retarder Film and Tape.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Trymer 3000 with Saran Film and Tape: Dow Chemical Company
- F. Fiber Glass: Fiber glass pipe insulation composed of heavy density fiberglass insulation with a resin binder, factory jacketed with reinforced all service vapor retarder jacket, secured with double pressure sensitive adhesive closure;
 - 1. Operating temperature range: 0°F to 850°F.
 - 2. 'K' ('ksi') Value: ASTM C 335, 0.23 at 75°F (0.033 at 24°C).
 - 3. ASJ Jacket permeance: ASTM E96 procedure A, 0.02 perm
 - 4. ASJ Jacket Service Temperature Range: -20°F to 150°F.
 - 5. Auxiliary items include: preformed wrappings for fittings and valves., butt joint sealing tape.
 - 6. Field Applied - Aluminum
 - 7. Flame Spread: ASTM E84, UL 723, <25
 - 8. Smoke Development: ASTM E84, UL 723<50
 - 9. Manufacturers:
 - a. Johns Manville
 - b. Owens-Corning Fiberglas Corp.
 - c. or pre-approved equal.

2.02 ADHESIVES

- A. Materials shall be compatible with insulation materials, jackets, and substrates and for bonding insulation to itself and to surfaces to be insulated, unless otherwise indicated.
- B. Flexible Elastomeric and Polyolefin Adhesive: Comply with MIL-A-24179A, Type II, Class I.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Aeroflex USA Inc.; Aeroseal.
 - b. Armacell LCC; 520 Adhesive.
 - c. Foster Products Corporation, H. B. Fuller Company; 85-75.
 - d. RBX Corporation; Rubatex Contact Adhesive.
 - 2. For indoor applications, use adhesive that has a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- C. Jacket Adhesive: Comply with MIL-A-3316C, Class 2, Grade A for bonding insulation jacket lap seams and joints.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products, Division of ITW; CP-82.
 - b. Foster Products Corporation, H. B. Fuller Company; 85-20.
 - c. ITW TACC, Division of Illinois Tool Works; S-90/80.
 - d. Marathon Industries, Inc.; 225.
 - e. Mon-Eco Industries, Inc.; 22-25.
 - 2. For indoor applications, use adhesive that has a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.03 MASTICS

- A. Materials shall be compatible with insulation materials, jackets, and substrates; comply with MIL-C-19565C, Type II.
 - 1. For indoor applications, use mastics that have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. Vapor-Barrier Mastic: Water based; suitable for indoor and outdoor use on below ambient services.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products, Division of ITW; CP-35.
 - b. Foster Products Corporation, H. B. Fuller Company; 30-90.
 - c. ITW TACC, Division of Illinois Tool Works; CB-50.
 - d. Marathon Industries, Inc.; 590.
 - e. Mon-Eco Industries, Inc.; 55-40.
 - f. Vimasco Corporation; 749.
 - 2. Water-Vapor Permeance: ASTM E 96, Procedure B, 0.013 perm at 43-mil dry film thickness.
 - 3. Service Temperature Range: Minus 20 to plus 180 deg F.
 - 4. Solids Content: ASTM D 1644, 59 percent by volume and 71 percent by weight.
 - 5. Color: White.

2.04 SEALANTS

- A. Joint Sealants:
 - 1. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 2. Permanently flexible, elastomeric sealant.
 - 3. Service Temperature Range: Minus 100 to plus 300 deg F.
 - 4. Color: White or gray.
 - 5. For indoor applications, use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
- B. FSK and Metal Jacket Flashing Sealants:
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products, Division of ITW; CP-76-8.
 - b. Foster Products Corporation, H. B. Fuller Company; 95-44.
 - c. Marathon Industries, Inc.; 405.
 - d. Mon-Eco Industries, Inc.; 44-05.
 - e. Vimasco Corporation; 750.
 - 2. Materials shall be compatible with insulation materials, jackets, and substrates.
 - 3. Fire- and water-resistant, flexible, elastomeric sealant.
 - 4. Service Temperature Range: Minus 40 to plus 250 deg F.
 - 5. Color: Aluminum.
 - 6. For indoor applications, use sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.05 FIELD-APPLIED JACKETS

- A. Field-applied jackets shall comply with ASTM C 921, Type I, unless otherwise indicated.
- B. Aluminum Jacket: Comply with ASTM B 209, Alloy 3003, 3005, 3105 or 5005, Temper H-14.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Childers Products, Division of ITW; Metal Jacketing Systems.
 - b. PABCO Metals Corporation; Surefit.
 - c. RPR Products, Inc.; Insul-Mate.
 - 2. Factory cut and rolled to size.
 - 3. Finish and thickness are indicated in field-applied jacket schedules.
 - 4. Factory-Fabricated Fitting Covers:
 - a. Same material, finish, and thickness as jacket.
 - b. Preformed 2-piece or gore, 45- and 90-degree, short- and long-radius elbows.
 - c. Tee covers.
 - d. Flange and union covers.
 - e. End caps.
 - f. Beveled collars.
 - g. Valve covers.
 - h. Field fabricate fitting covers only if factory-fabricated fitting covers are not available.

2.06 TAPES

- A. Saran Tape: White vapor-retarder tape matching factory-applied jacket with acrylic adhesive, complying with ASTM C 1136.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. The Dow Chemical Company
 - b. Compac Corp.; 104 and 105.
 - c. Ideal Tape Co., Inc., an American Biltrite Company; 428 AWF ASJ.
 - d. Venture Tape; 1540 CW Plus, 1542 CW Plus, and 1542 CW Plus/SQ.
 - 2. Width: 3 inches.
 - 3. Thickness: 11.5 mils.
 - 4. Adhesion: 90 ounces force/inch in width.
 - 5. Elongation: 2 percent.
 - 6. Tensile Strength: 40 lbf/inch in width.
 - 7. ASJ Tape Disks and Squares: Precut disks or squares of ASJ tape.
- B. FSK Tape: Foil-face, vapor-retarder tape matching factory-applied jacket with acrylic adhesive; complying with ASTM C 1136.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Avery Dennison Corporation, Specialty Tapes Division; Fasson 0827.
 - b. Compac Corp.; 110 and 111.
 - c. Ideal Tape Co., Inc., an American Biltrite Company; 491 AWF FSK.
 - d. Venture Tape; 1525 CW, 1528 CW, and 1528 CW/SQ.
 - 2. Width: 3 inches.
 - 3. Thickness: 6.5 mils.
 - 4. Adhesion: 90 ounces force/inch in width.
 - 5. Elongation: 2 percent.
 - 6. Tensile Strength: 40 lbf/inch in width.
 - 7. FSK Tape Disks and Squares: Precut disks or squares of FSK tape.

2.07 SECUREMENTS

- A. Aluminum Bands: ASTM B 209, Alloy 3003, 3005, 3105, or 5005; Temper H-14, 0.020 inch thick, 3/4 inch wide with wing or closed seal.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Childers Products; Bands.
 - b. PABCO Metals Corporation; Bands.
 - c. RPR Products, Inc.; Bands.

2.08 CORNER ANGLES

- A. Aluminum Corner Angles: 0.040 inch thick, minimum 1 by 1 inch, aluminum according to ASTM B 209, Alloy 3003, 3005, 3105 or 5005; Temper H-14.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Surface Preparation: Clean and dry surfaces to receive insulation. Remove materials that will adversely affect insulation application.
- B. Mix insulating cements with clean potable water; if insulating cements are to be in contact with stainless-steel surfaces, use demineralized water.

3.02 GENERAL INSTALLATION REQUIREMENTS

- A. Install insulation materials, accessories, and finishes with smooth, straight, and even surfaces; free of voids throughout the length of equipment and piping including fittings, valves, and specialties.
- B. Install insulation materials, forms, vapor barriers or retarders, jackets, and thicknesses required for each item of equipment and pipe system as specified in insulation system schedules.
- C. Install accessories compatible with insulation materials and suitable for the service. Install accessories that do not corrode, soften, or otherwise attack insulation or jacket in either wet or dry state.
- D. Install insulation with longitudinal seams at top and bottom of horizontal runs.
- E. Install multiple layers of insulation with longitudinal and end seams staggered.
- F. Do not weld brackets, clips, or other attachment devices to piping, fittings, and specialties.
- G. Keep insulation materials dry during application and finishing.
- H. Install insulation with tight longitudinal seams and end joints. Bond seams and joints with adhesive recommended by insulation material manufacturer.
- I. Install insulation with least number of joints practical.
- J. Where vapor barrier is indicated, seal joints, seams, and penetrations in insulation at hangers, supports, anchors, and other projections with vapor-barrier mastic.
 - 1. Install insulation continuously through hangers and around anchor attachments.
 - 2. For insulation application where vapor barriers are indicated, extend insulation on anchor legs from point of attachment to supported item to point of attachment to structure. Taper and seal ends at attachment to structure with vapor-barrier mastic.
- K. Apply adhesives, mastics, and sealants at manufacturer's recommended coverage rate and wet and dry film thicknesses.

- L. Install insulation with factory-applied jackets as follows:
 - 1. Draw jacket tight and smooth.
 - 2. Cover circumferential joints with 3-inch- wide strips, of same material as insulation jacket. Secure strips with adhesive and outward clinching staples along both edges of strip, spaced 4 inches o.c.
 - 3. Overlap jacket longitudinal seams at least 1-1/2 inches. Install insulation with longitudinal seams at bottom of pipe. Clean and dry surface to receive self-sealing lap. Staple laps with outward clinching staples along edge at 4 inches o.c.
 - a. For below ambient services, apply vapor-barrier mastic over staples.
 - 4. Cover joints and seams with tape as recommended by insulation material manufacturer to maintain vapor seal.
 - 5. Where vapor barriers are indicated, apply vapor-barrier mastic on seams and joints and at ends adjacent to pipe flanges and fittings.
- M. Cut insulation in a manner to avoid compressing insulation more than 75 percent of its nominal thickness.
- N. Finish installation with systems at operating conditions. Repair joint separations and cracking due to thermal movement.
- O. Repair damaged insulation facings by applying same facing material over damaged areas. Extend patches at least 4 inches beyond damaged areas. Adhere, staple, and seal patches similar to butt joints.

3.03 PENETRATIONS

- A. Insulation Installation at Roof Penetrations: Install insulation continuously through roof penetrations.
 - 1. Seal penetrations with flashing sealant.
 - 2. For applications requiring only indoor insulation, terminate insulation above roof surface and seal with joint sealant. For applications requiring indoor and outdoor insulation, install insulation for outdoor applications tightly joined to indoor insulation ends. Seal joint with joint sealant.
 - 3. Extend jacket of outdoor insulation outside roof flashing at least 2 inches below top of roof flashing.
 - 4. Seal jacket to roof flashing with flashing sealant.
- B. Insulation Installation at Interior Wall and Partition Penetrations (That Are Not Fire Rated): Install insulation continuously through walls and partitions.
- C. Insulation Installation at Fire-Rated Wall and Partition Penetrations: Install insulation continuously through penetrations of fire-rated walls and partitions.
 - 1. Comply with NFPA requirements for firestopping and fire-resistive joint sealers.
- D. Insulation Installation at Floor Penetrations:
 - 1. Pipe: Install insulation continuously through floor penetrations.
 - 2. Seal penetrations through fire-rated assemblies. Comply with NFPA requirements for firestopping and fire-resistive joint sealers.

3.04 GENERAL PIPE INSULATION INSTALLATION

- A. Requirements in this article generally apply to all insulation materials except where more specific requirements are specified in various pipe insulation material installation articles.
- B. Insulation Installation on Fittings, Valves, Strainers, Flanges, and Unions:
1. Install insulation over fittings, valves, strainers, flanges, unions, and other specialties with continuous thermal and vapor-retarder integrity, unless otherwise indicated.
 2. Insulate pipe elbows using preformed fitting insulation or mitered fittings made from same material and density as adjacent pipe insulation. Each piece shall be butted tightly against adjoining piece and bonded with adhesive. Fill joints, seams, voids, and irregular surfaces with insulating cement finished to a smooth, hard, and uniform contour that is uniform with adjoining pipe insulation.
 3. Insulate tee fittings with preformed fitting insulation or sectional pipe insulation of same material and thickness as used for adjacent pipe. Cut sectional pipe insulation to fit. Butt each section closely to the next and hold in place with tie wire. Bond pieces with adhesive.
 4. Insulate valves using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. For valves, insulate up to and including the bonnets, valve stuffing-box studs, bolts, and nuts. Fill joints, seams, and irregular surfaces with insulating cement.
 5. Insulate strainers using preformed fitting insulation or sectional pipe insulation of same material, density, and thickness as used for adjacent pipe. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker. Fill joints, seams, and irregular surfaces with insulating cement. Insulate strainers so strainer basket flange or plug can be easily removed and replaced without damaging the insulation and jacket. Provide a removable reusable insulation cover. For below ambient services, provide a design that maintains vapor barrier.
 6. Insulate flanges and unions using a section of oversized preformed pipe insulation. Overlap adjoining pipe insulation by not less than two times the thickness of pipe insulation, or one pipe diameter, whichever is thicker.
 7. Cover segmented insulated surfaces with a layer of finishing cement and coat with a mastic. Install vapor-barrier mastic for below ambient services and a breather mastic for above ambient services. Reinforce the mastic with fabric-reinforcing mesh. Trowel the mastic to a smooth and well-shaped contour.
 8. For services not specified to receive a field-applied jacket except for flexible elastomeric and polyolefin, install fitted PVC cover over elbows, tees, strainers, valves, flanges, and unions. Terminate ends with PVC end caps. Tape PVC covers to adjoining insulation facing using PVC tape.
 9. Stencil or label the outside insulation jacket of each union with the word "UNION." Match size and color of pipe labels.
- C. Insulate instrument connections for thermometers, pressure gages, pressure temperature taps, test connections, flow meters, sensors, switches, and transmitters on insulated pipes, vessels, and equipment. Shape insulation at these connections by

tapering it to and around the connection with insulating cement and finish with finishing cement, mastic, and flashing sealant.

- D. Install removable insulation covers at locations indicated. Installation shall conform to the following:
1. Make removable flange and union insulation from sectional pipe insulation of same thickness as that on adjoining pipe. Install same insulation jacket as adjoining pipe insulation.
 2. When flange and union covers are made from sectional pipe insulation, extend insulation from flanges or union long at least two times the insulation thickness over adjacent pipe insulation on each side of flange or union. Secure flange cover in place with stainless-steel or aluminum bands. Select band material compatible with insulation and jacket.
 3. Construct removable valve insulation covers in same manner as for flanges except divide the two-part section on the vertical center line of valve body.
 4. When covers are made from block insulation, make two halves, each consisting of mitered blocks wired to stainless-steel fabric. Secure this wire frame, with its attached insulation, to flanges with tie wire. Extend insulation at least 2 inches over adjacent pipe insulation on each side of valve. Fill space between flange or union cover and pipe insulation with insulating cement. Finish cover assembly with insulating cement applied in two coats. After first coat is dry, apply and trowel second coat to a smooth finish.
 5. Unless a PVC jacket is indicated in field-applied jacket schedules, finish exposed surfaces with a metal jacket.

3.05 FLEXIBLE ELASTOMERIC INSULATION INSTALLATION

- A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- B. Insulation Installation on Pipe Flanges:
1. Install pipe insulation to outer diameter of pipe flange.
 2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
 3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of sheet insulation of same thickness as pipe insulation.
 4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- C. Insulation Installation on Pipe Fittings and Elbows:
1. Install mitered sections of pipe insulation.
 2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.
- D. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed valve covers manufactured of same material as pipe insulation when available.
2. When preformed valve covers are not available, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.
4. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.06 POLYISOCYANURATE INSULATION INSTALLATION

A. Insulation Installation on Straight Pipes and Tubes:

1. Seal split-tube longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

B. Insulation Installation on Pipe Flanges:

1. Install pipe insulation to outer diameter of pipe flange.
2. Make width of insulation section same as overall width of flange and bolts, plus twice the thickness of pipe insulation.
3. Fill voids between inner circumference of flange insulation and outer circumference of adjacent straight pipe segments with cut sections of polyolefin sheet insulation of same thickness as pipe insulation.
4. Secure insulation to flanges and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Pipe Fittings and Elbows:

1. Install mitered sections of polyolefin pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Insulation Installation on Valves and Pipe Specialties:

1. Install cut sections of polyolefin pipe and sheet insulation to valve body.
2. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Install insulation to flanges as specified for flange insulation application.
4. Secure insulation to valves and specialties, and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

3.07 FIBERGLASS INSULATION

- A. Locate all seams in the least visible location.

- B. All ends must be firmly butted and secured with appropriate butt-strip material. On high-temperature piping, double layering with staggered joints may be appropriate. When double layering, the inner layer should not be jacketed.
- C. Metal shields shall be installed between hangers or supports and the piping insulation. Rigid insulation inserts shall be installed as required between the pipe and the insulation shields. Inserts shall be of equal thickness to the adjacent insulation and shall be vapor sealed as required.
- D. All penetrations and damage to the facing shall be repaired using pressure-sensitive foil tape, or mastic prior to system startup.

3.08 FIELD-APPLIED JACKET INSTALLATION

- A. Where metal jackets are indicated, install with 2-inch overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches o.c. and at end joints.

3.09 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Tests and Inspections:
 - 1. Inspect pipe, fittings, strainers, and valves, randomly selected by Architect, by removing field-applied jacket and insulation in layers in reverse order of their installation. Extent of inspection shall be limited to three locations of straight pipe, three locations of threaded fittings, three locations of threaded valves, for each pipe service defined in the "Piping Insulation Schedule, General" Article.
- C. All insulation applications will be considered defective Work if sample inspection reveals noncompliance with requirements.

3.10 PIPING INSULATION SCHEDULE, GENERAL

- D. Acceptable preformed pipe and tubular insulation materials and thicknesses are identified for each piping system and pipe size range. If more than one material is listed for a piping system, selection from materials listed is Contractor's option.
- E. Items Not Insulated: Unless otherwise indicated, do not install insulation on the following:
 - 1. Drainage piping located in crawl spaces.
 - 2. Underground piping.
 - 3. Chrome-plated pipes and fittings unless there is a potential for personnel injury.

3.11 OUTDOOR, ROOFTOP PIPING INSULATION SCHEDULE

All outdoor rooftop piping insulation shall be jacketed with Aluminum.

F. Insulation shall be one of the following:

1. Flexible Elastomeric:
 - a. Piping < 2 in
1 inches thick
2. Polyisocyanurate:
 - a. Piping < 2 in
1 inches thick
3. Fiberglass:
 - a. Piping < 2 in
1 inches thick

3.13 OUTDOOR, FIELD-APPLIED JACKET SCHEDULE

- G. Install jacket over all outdoor rooftop pipe insulation material. For insulation with factory-applied jacket, install the field-applied jacket over the factory-applied jacket.
- H. If more than one material is listed, selection from materials listed is Contractor's option.
- I. Piping, Exposed:
1. Aluminum, Smooth with Z-Shaped Locking Seam: 0.020 inch thick.

END OF SECTION

SECTION 15110 - VALVES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Bronze ball valves.
 - 2. Iron, single-flange butterfly valves.
 - 3. Iron, grooved-end butterfly valves.
 - 4. Bronze swing check valves.
 - 5. Iron swing check valves.
 - 6. Iron, grooved-end swing-check valves.
 - 7. Iron, plate-type check valves.
- B. Related Sections:
 - 1. SECTION 15140 – DOMESTIC WATER PIPING
 - 2. SECTION 15145 – DOMESTIC WATER PIPING SPECIALTIES

1.03 DEFINITIONS

- A. CWP: Cold working pressure.
- B. EPDM: Ethylene propylene copolymer rubber.
- C. NBR: Acrylonitrile-butadiene, Buna-N, or nitrile rubber.

1.04 SUBMITTALS

- A. Product Data: For each type of valve indicated.

1.05 QUALITY ASSURANCE

- A. Source Limitations for Valves: Obtain each type of valve from single source from single manufacturer.
- B. ASME Compliance:

1. ASME B16.10 and ASME B16.34 for ferrous valve dimensions and design criteria.
2. ASME B31.9 for building services piping valves.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Prepare valves for shipping as follows:

1. Protect internal parts against rust and corrosion.
2. Protect threads, flange faces, grooves, and weld ends.
3. Set ball and plug valves open to minimize exposure of functional surfaces.
4. Set butterfly valves closed or slightly open.
5. Block check valves in either closed or open position.

B. Use the following precautions during storage:

1. Maintain valve end protection.
2. Store valves indoors and maintain at higher than ambient dew point temperature. If outdoor storage is necessary, store valves off the ground in watertight enclosures.

C. Use sling to handle large valves; rig sling to avoid damage to exposed parts. Do not use handwheels or stems as lifting or rigging points.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS FOR VALVES

- A. Valve Pressure and Temperature Ratings: Not less than indicated and as required for system pressures and temperatures.
- B. Valve Sizes: Same as upstream piping unless otherwise indicated.
- C. Valve Actuator Types:
 1. Handlever: For quarter-turn valves NPS 6 and smaller.
- D. Valves in Insulated Piping: With 2-inch stem extensions and the following features:
 1. Ball Valves: With extended operating handle of non-thermal-conductive material, and protective sleeve that allows operation of valve without breaking the vapor seal or disturbing insulation.
 2. Butterfly Valves: With extended neck.
- E. Valve-End Connections:
 1. Flanged: With flanges according to ASME B16.1 for iron valves.
 2. Grooved: With grooves according to AWWA C606.
 3. Solder Joint: With sockets according to ASME B16.18.
 4. Threaded: With threads according to ASME B1.20.1.

2.02 BRONZE BALL VALVES

A. Two-Piece, Full-Port, Bronze Ball Valves with Stainless-Steel Trim:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Conbraco Industries, Inc.; Apollo Valves.
 - b. Crane Co.; Crane Valve Group; Crane Valves.
 - c. Hammond Valve.
 - d. Lance Valves; a division of Advanced Thermal Systems, Inc.
 - e. Milwaukee Valve Company.
 - f. NIBCO INC.
 - g. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
2. Description:
 - a. Standard: MSS SP-110.
 - b. SWP Rating: 150 psig.
 - c. CWP Rating: 600 psig.
 - d. Body Design: Two piece.
 - e. Body Material: Bronze.
 - f. Ends: Threaded.
 - g. Seats: PTFE or TFE.
 - h. Stem: Stainless steel.
 - i. Ball: Stainless steel, vented.
 - j. Port: Full.

2.03 IRON, SINGLE-FLANGE BUTTERFLY VALVES

A. 200 CWP, Iron, Single-Flange Butterfly Valves with EPDM Seat and Aluminum-Bronze Disc:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. ABZ Valve and Controls; a division of ABZ Manufacturing, Inc.
 - b. Conbraco Industries, Inc.; Apollo Valves.
 - c. Cooper Cameron Valves; a division of Cooper Cameron Corp.
 - d. Crane Co.; Crane Valve Group; Jenkins Valves.
 - e. Crane Co.; Crane Valve Group; Stockham Division.
 - f. DeZurik Water Controls.
 - g. Flo Fab Inc.
 - h. Hammond Valve.
 - i. Kitz Corporation.
 - j. Legend Valve.
 - k. Milwaukee Valve Company.
 - l. NIBCO INC.

- m. Norriseal; a Dover Corporation company.
- n. Red-White Valve Corporation.
- o. Spence Strainers International; a division of CIRCOR International.
- p. Watts Regulator Co.; a division of Watts Water Technologies, Inc.

2. Description:

- a. Standard: MSS SP-67, Type I.
- b. CWP Rating: 200 psig.
- c. Body Design: Lug type; suitable for bidirectional dead-end service at rated pressure without use of downstream flange.
- d. Body Material: ASTM A 126, cast iron or ASTM A 536, ductile iron.
- e. Seat: EPDM.
- f. Stem: One- or two-piece stainless steel.
- g. Disc: Aluminum bronze.

2.04 IRON, GROOVED-END BUTTERFLY VALVES

A. 175 CWP, Iron, Grooved-End Butterfly Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Kennedy Valve; a division of McWane, Inc.
- b. Shurjoint Piping Products.
- c. Tyco Fire Products LP; Grinnell Mechanical Products.
- d. Victaulic Company.

2. Description:

- a. Standard: MSS SP-67, Type I.
- b. CWP Rating: 175 psig.
- c. Body Material: Coated, ductile iron.
- d. Stem: Two-piece stainless steel.
- e. Disc: Coated, ductile iron.
- f. Seal: EPDM.

2.05 IRON SWING CHECK VALVES

A. Class 125, Iron Swing Check Valves with Metal Seats:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Crane Co.; Crane Valve Group; Crane Valves.
- b. Crane Co.; Crane Valve Group; Jenkins Valves.
- c. Crane Co.; Crane Valve Group; Stockham Division.

- d. Hammond Valve.
- e. Kitz Corporation.
- f. Legend Valve.
- g. Milwaukee Valve Company.
- h. NIBCO INC.
- i. Powell Valves.
- j. Red-White Valve Corporation.
- k. Sure Flow Equipment Inc.
- l. Watts Regulator Co.; a division of Watts Water Technologies, Inc.
- m. Zy-Tech Global Industries, Inc.

2. Description:

- a. Standard: MSS SP-71, Type I.
- b. NPS 2-1/2 to NPS 12, CWP Rating: 200 psig.
- c. NPS 14 to NPS 24, CWP Rating: 150 psig.
- d. Body Design: Clear or full waterway.
- e. Body Material: ASTM A 126, gray iron with bolted bonnet.
- f. Ends: Flanged.
- g. Trim: Bronze.
- h. Gasket: Asbestos free.

2.06 IRON, GROOVED-END SWING CHECK VALVES

A. 300 CWP, Iron, Grooved-End Swing Check Valves:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. Anvil International, Inc.
- b. Shurjoint Piping Products.
- c. Tyco Fire Products LP; Grinnell Mechanical Products.
- d. Victaulic Company.

2. Description:

- a. CWP Rating: 300 psig.
- b. Body Material: ASTM A 536, ductile iron.
- c. Seal: EPDM.
- d. Disc: Spring operated, ductile iron or stainless steel.

2.07 IRON, PLATE-TYPE CHECK VALVES

A. Class 125, Iron, Dual-Plate Check Valves with Metal Seat:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

- a. APCO Willamette Valve and Primer Corporation.
- b. Crane Co.; Crane Valve Group; Crane Valves.
- c. Flomatic Corporation.
- d. Mueller Steam Specialty; a division of SPX Corporation.

2. Description:

- a. Standard: API 594.
- b. NPS 2-1/2 to NPS 12, CWP Rating: 200 psig.
- c. NPS 14 to NPS 24, CWP Rating: 150 psig.
- d. Body Design: Wafer, spring-loaded plates.
- e. Body Material: ASTM A 126, gray iron.
- f. Seat: Bronze.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine valve interior for cleanliness, freedom from foreign matter, and corrosion. Remove special packing materials, such as blocks, used to prevent disc movement during shipping and handling.
- B. Operate valves in positions from fully open to fully closed. Examine guides and seats made accessible by such operations.
- C. Examine threads on valve and mating pipe for form and cleanliness.
- D. Examine mating flange faces for conditions that might cause leakage. Check bolting for proper size, length, and material. Verify that gasket is of proper size, that its material composition is suitable for service, and that it is free from defects and damage.
- E. Do not attempt to repair defective valves; replace with new valves.

3.02 VALVE INSTALLATION

- A. Install valves with unions or flanges at each piece of equipment arranged to allow service, maintenance, and equipment removal without system shutdown.
- B. Locate valves for easy access and provide separate support where necessary.
- C. Install valves in horizontal piping with stem at or above center of pipe.
- D. Install valves in position to allow full stem movement.
- E. Install check valves for proper direction of flow and as follows:
 - 1. Swing Check Valves: In horizontal position with hinge pin level.

2. Plate-Type Check Valves: In horizontal or vertical position, between flanges.

3.03 ADJUSTING

- A. Adjust or replace valve packing after piping systems have been tested and put into service but before final adjusting and balancing. Replace valves if persistent leaking occurs.

3.04 GENERAL REQUIREMENTS FOR VALVE APPLICATIONS

- A. If valve applications are not indicated, use the following:
 1. Shutoff Service: Ball, butterfly valves.
 2. Pump-Discharge Check Valves:
 - a. NPS 2-1/2 and Larger: Iron swing check valves or iron, center-guided, metal-seat check valves.
- B. If valves with specified SWP classes or CWP ratings are not available, the same types of valves with higher SWP classes or CWP ratings may be substituted.
- C. Select valves, except wafer types, with the following end connections:
 1. For Copper Tubing, NPS 2 and Smaller: Threaded ends except where solder-joint valve-end option is indicated in valve schedules below.
 2. For Copper Tubing, NPS 2-1/2 to NPS 4: Flanged ends except where threaded valve-end option is indicated in valve schedules below.
 3. For Steel Piping, NPS 2 and Smaller: Threaded ends.
 4. For Steel Piping, NPS 2-1/2 to NPS 4: Flanged ends except where threaded valve-end option is indicated in valve schedules below.
 5. For Grooved-End Steel Piping: Valve ends may be grooved.

3.05 DOMESTIC WATER VALVE SCHEDULE

- A. Pipe NPS 2 and Smaller:
 1. Ball Valves: Two piece, full port, bronze with stainless-steel trim.
- B. Pipe NPS 2-1/2 and Larger:
 1. Iron, Single-Flange Butterfly Valves, NPS 2-1/2 to NPS 12: 200 CWP, EPDM seat, aluminum-bronze disc.
 2. Iron, Grooved-End Butterfly Valves, NPS 2-1/2 to NPS 12: 175 CWP.
 3. Iron, Grooved-End Check Valves, NPS 3 to NPS 12: 300 CWP.
 4. Iron, Plate-Type Check Valves: Class 125; dual plate; metal seat.

END OF SECTION

SECTION 15126 - METERS AND GAGES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:

1. Thermometers.
2. Gages.
3. Test plugs.

- B. Related Sections: NA

1.03 DEFINITIONS

- A. CR: Chlorosulfonated polyethylene synthetic rubber.
- B. EPDM: Ethylene-propylene-diene terpolymer rubber.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated; include performance curves.

PART 2 - PRODUCTS

2.01 DIRECT-MOUNTING, VAPOR-ACTUATED DIAL THERMOMETERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 1. Ashcroft Commercial Instrument Operations; Dresser Industries; Instrument Div.
 2. KOBOLD Instruments, Inc.
 3. Marsh Bellofram.
 4. Terice, H. O. Co.
 5. Weiss Instruments, Inc.
 6. Weksler Instruments Operating Unit; Dresser Industries; Instrument Div.

- B. Case: Dry type, drawn steel or cast aluminum, 4-1/2-inch diameter.
- C. Element: Bourdon tube or other type of pressure element.
- D. Movement: Mechanical, connecting element and pointer.
- E. Dial: Satin-faced, nonreflective aluminum with permanently etched scale markings.
- F. Pointer: Red or other dark-color metal.
- G. Window: Glass.
- H. Ring: Metal.
- I. Connector: Adjustable type, 180 degrees in vertical plane, 360 degrees in horizontal plane, with locking device.
- J. Thermal System: Liquid- or mercury-filled bulb in copper-plated steel, aluminum, or brass stem for thermowell installation and of length to suit installation.
- K. Accuracy: Plus or minus 1 percent of range or plus or minus 1 scale division to maximum of 1.5 percent of range.

2.02 THERMOWELLS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. AMETEK, Inc.; U.S. Gauge Div.
 - 2. Ashcroft Commercial Instrument Operations; Dresser Industries; Instrument Div.
 - 3. Ernst Gage Co.
 - 4. Marsh Bellofram.
 - 5. Miljoco Corp.
 - 6. NANMAC Corporation.
 - 7. Noshok, Inc.
 - 8. Palmer - Wahl Instruments Inc.
 - 9. REO TEMP Instrument Corporation.
 - 10. Tel-Tru Manufacturing Company.
 - 11. Trerice, H. O. Co.
 - 12. Weiss Instruments, Inc.
 - 13. Weksler Instruments Operating Unit; Dresser Industries; Instrument Div.
 - 14. WIKA Instrument Corporation.
 - 15. Winters Instruments.
- B. Manufacturers: Same as manufacturer of thermometer being used.
- C. Description: Pressure-tight, socket-type metal fitting made for insertion into piping and of type, diameter, and length required to hold thermometer.

2.03 PRESSURE GAGES

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. AMETEK, Inc.; U.S. Gauge Div.
2. Ashcroft Commercial Instrument Operations; Dresser Industries; Instrument Div.
3. Ernst Gage Co.
4. Eugene Ernst Products Co.
5. KOBOLD Instruments, Inc.
6. Marsh Bellofram.
7. Miljoco Corp.
8. Noshok, Inc.
9. Palmer - Wahl Instruments Inc.
10. REO TEMP Instrument Corporation.
11. Terice, H. O. Co.
12. Weiss Instruments, Inc.
13. Weksler Instruments Operating Unit; Dresser Industries; Instrument Div.
14. WIKA Instrument Corporation.
15. Winters Instruments.

- B. Direct-Mounting, Dial-Type Pressure Gages: Indicating-dial type complying with ASME B40.100.

1. Case: Dry type, drawn steel or cast aluminum, 4-1/2-inch diameter.
2. Pressure-Element Assembly: Bourdon tube, unless otherwise indicated.
3. Pressure Connection: Brass, NPS 1/4, bottom-outlet type unless back-outlet type is indicated.
4. Movement: Mechanical, with link to pressure element and connection to pointer.
5. Dial: Satin-faced, nonreflective aluminum with permanently etched scale markings.
6. Pointer: Red or other dark-color metal.
7. Window: Glass.
8. Ring: Metal.
9. Accuracy: Grade B, plus or minus 2 percent of middle half scale.
10. Range for Fluids under Pressure: Two times operating pressure.

- C. Pressure-Gage Fittings:

1. Valves: NPS 1/4 brass or stainless-steel needle type.
2. Syphons: NPS 1/4 coil of brass tubing with threaded ends.
3. Snubbers: ASME B40.5, NPS 1/4 brass bushing with corrosion-resistant, porous-metal disc of material suitable for system fluid and working pressure.

2.04 TEST PLUGS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Flow Design, Inc.
 2. MG Piping Products Co.
 3. National Meter, Inc.
 4. Peterson Equipment Co., Inc.
 5. Sisco Manufacturing Co.
 6. Trerice, H. O. Co.
 7. Watts Industries, Inc.; Water Products Div.
- B. Description: Corrosion-resistant brass or stainless-steel body with core inserts and gasketed and threaded cap, with extended stem for units to be installed in insulated piping.
- C. Minimum Pressure and Temperature Rating: 500 psig at 200 deg F.
- D. Core Inserts: One or two self-sealing rubber valves.
1. Insert material for air or water service at minus 30 to plus 275 deg F shall be EPDM.
- E. Test Kit: Furnish one test kit(s) containing one pressure gage and adaptor, one thermometer(s), and carrying case. Pressure gage, adapter probes, and thermometer sensing elements shall be of diameter to fit test plugs and of length to project into piping.
1. Pressure Gage: Small bourdon-tube insertion type with 2- to 3-inch- diameter dial and probe. Dial range shall be 0 to 200 psig.
 2. Low-Range Thermometer: Small bimetallic insertion type with 1- to 2-inch-diameter dial and tapered-end sensing element. Dial ranges shall be 25 to 125 deg F.
 3. Carrying case shall have formed instrument padding.

PART 3 - EXECUTION

3.01 THERMOMETER APPLICATIONS

- A. Install direct-mounting, vapor-actuated dial thermometers in the locations shown in drawings:
- B. Provide the following temperature ranges for thermometers:
 1. Chilled Water: 0 to 100 deg F, with 2-degree scale divisions.

3.02 GAGE APPLICATIONS

- A. Install dry-case-type pressure gages for discharge of each pressure-reducing valve.
- B. Install dry-case-type pressure gages at each water storage tank.
- C. Install dry-case-type pressure gages at suction and discharge of each pump.

3.03 INSTALLATIONS

- A. Install direct-mounting thermometers and adjust vertical and tilted positions.
- B. Install thermowells with socket extending a minimum of 2 inches into fluid and in vertical position in piping tees where thermometers are indicated.
- C. Install direct-mounting pressure gages in piping tees with pressure gage located on pipe at most readable position.
- D. Install needle-valve and snubber fitting in piping for each pressure gage for fluids (except steam).
- E. Install test plugs in tees in piping.
- F. Install connection fittings for attachment to portable indicators in accessible locations.

3.04 CONNECTIONS

- A. Install meters and gages adjacent to machines and equipment to allow service and maintenance for meters, gages, machines, and equipment.

3.05 ADJUSTING

- A. Calibrate meters according to manufacturer's written instructions, after installation.
- B. Adjust faces of meters and gages to proper angle for best visibility.

END OF SECTION

SECTION 15140 - DOMESTIC WATER PIPING

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes domestic water piping on the building rooftop.
- B. See Division 15 Section "Meters and Gages" for thermometers, pressure gages, and fittings.

1.02 SUBMITTALS

- A. Field quality-control test reports.

1.03 QUALITY ASSURANCE

- A. Comply with NSF 14, "Plastics Piping System Components and Related Materials," for plastic, potable domestic water piping and components.
- B. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9," for potable domestic water piping and components.

PART 2 - PRODUCTS

2.01 PIPING MATERIALS

- A. Refer to Part 3 "Pipe and Fitting Applications" Article for applications of pipe, tube, fitting, and joining materials.
- B. Transition Couplings for Aboveground Pressure Piping: Coupling or other manufactured fitting the same size as, with pressure rating at least equal to and ends compatible with, piping to be joined.
- C. Hard Copper Tube: ASTM B 88, Types L water tube, drawn temper.
 - 1. Copper Pressure Fittings: ASME B16.18, cast-copper-alloy or ASME B16.22, wrought- copper, solder-joint fittings. Furnish wrought-copper fittings if indicated.

PART 3 - EXECUTION

3.01 PIPE AND FITTING APPLICATIONS

- A. Transition and special fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
- B. Flanges may be used on aboveground piping, unless otherwise indicated.
- C. Fitting Option: Extruded-tee connections and brazed joints may be used on aboveground copper tubing.
- D. Aboveground Domestic Water Piping: Use the following piping materials for each size range:
 - 1. NPS 1 and Smaller: Hard copper tube, Type L; copper pressure fittings; and soldered joints.
 - 2. NPS 1-1/4 and NPS 1-1/2: Hard copper tube, Type L; copper pressure fittings; and soldered joints.
 - 3. NPS 2: Hard copper tube, Type L; copper pressure fittings; and soldered joints.
 - 4. NPS 2-1/2 to NPS 3-1/2: Hard copper tube, Type L; copper pressure fittings; and soldered joints.

3.02 VALVE APPLICATIONS

- A. Drawings indicate valve types to be used. Where specific valve types are not indicated, the following requirements apply:
 - 1. Shutoff Duty: Use bronze ball valves for piping NPS 2 and smaller. Use cast-iron butterfly or gate valves with flanged ends for piping NPS 2-1/2 and larger.
 - 2. Drain Duty: Hose-end drain valves.
- B. Install shutoff valve close to water main on each branch and riser serving plumbing fixtures or equipment, on each water supply to equipment, and on each water supply to plumbing fixtures that do not have supply stops. Use ball valves for piping NPS 2 and smaller. Use butterfly or gate valves for piping NPS 2-1/2 and larger.
- C. Install drain valves for equipment at base of each water riser, at low points in horizontal piping, and where required to drain water piping.
 - 1. Install hose-end drain valves at low points in water mains, risers, and branches.
- D. Install calibrated balancing valves in each hot-water circulation return branch and discharge side of each pump and circulator. Set calibrated balancing valves partly open to restrict but not stop flow. Calibrated balancing valves are specified in Division 15 Section "Plumbing Specialties."

3.03 PIPING INSTALLATION

- A. Basic piping installation requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."
- B. Install shutoff valve, hose-end drain valve, strainer, pressure gage, and test tee with valve, inside the building at each domestic water service entrance. Pressure gages are specified in Division 15 Section "Meters and Gages," and drain valves and strainers are specified in Division 15 Section "Plumbing Specialties."
- C. Install domestic water piping level with 0.25 percent slope downward toward drain and plumb.

3.04 JOINT CONSTRUCTION

- A. Basic piping joint construction requirements are specified in Division 15 Section "Basic Mechanical Materials and Methods."
- B. Soldered Joints: Use ASTM B 813, water-flushable, lead-free flux; ASTM B 32, lead-free-alloy solder; and ASTM B 828 procedure, unless otherwise indicated.

3.05 HANGER AND SUPPORT INSTALLATION

- A. Pipe hanger and support devices are specified in Division 15 Section "Hangers and Supports." Install the following:
 - 1. Vertical Piping: MSS Type 8 or Type 42, clamps.
 - 2. Individual, Straight, Horizontal Piping Runs: According to the following:
 - a. 100 Feet and Less: MSS Type 1, adjustable, steel clevis hangers.
 - b. Longer Than 100 Feet: MSS Type 43, adjustable roller hangers.
 - c. Longer Than 100 Feet: MSS Type 49, spring cushion rolls, if indicated.
 - 3. Multiple, Straight, Horizontal Piping Runs 100 Feet or Longer: MSS Type 44, pipe rolls. Support pipe rolls on trapeze.
 - 4. Base of Vertical Piping: MSS Type 52, spring hangers.
- B. Install supports according to Division 15 Section "Hangers and Supports."
- C. Support vertical piping and tubing at base and at each floor.
- D. Rod diameter may be reduced 1 size for double-rod hangers, to a minimum of 3/8 inch.
- E. Install hangers for copper tubing with the following maximum horizontal spacing and minimum rod diameters:
 - 1. NPS 3/4 and Smaller: 60 inches with 3/8-inch rod.
 - 2. NPS 1 and NPS 1-1/4 : 72 inches with 3/8-inch rod.
 - 3. NPS 1-1/2 and NPS 2: 96 inches with 3/8-inch rod.

4. NPS 2-1/2: 108 inches with 1/2-inch rod.
5. NPS 3 to NPS 5: 10 feet with 1/2-inch rod.
6. NPS 6: 10 feet with 5/8-inch rod.

- F. Install supports for vertical copper tubing every 10 feet.
- G. Support piping and tubing not listed above according to MSS SP-69 and manufacturer's written instructions.

3.06 CONNECTIONS

- A. Install piping adjacent to equipment and machines to allow service and maintenance.
- B. Connect domestic water piping to exterior water-service piping. Use transition fitting to join dissimilar piping materials.
- C. Connect domestic water piping to water-service piping with shutoff valve, and extend and connect to the following:
 1. Water Heaters: Cold-water supply and hot-water outlet piping in sizes indicated, but not smaller than sizes of water heater connections.
 2. Plumbing Fixtures: Cold- and hot-water supply piping in sizes indicated, but not smaller than required by plumbing code.
 3. Equipment: Cold- and hot-water supply piping as indicated, but not smaller than equipment connections. Provide shutoff valve and union for each connection. Use flanges instead of unions for NPS 2-1/2 and larger.

3.07 FIELD QUALITY CONTROL

- A. Inspect domestic water piping as follows:
 1. Do not enclose, cover, or put piping into operation until it has been inspected and approved by authorities having jurisdiction.
 2. During installation, notify authorities having jurisdiction at least 24 hours before inspection must be made. Perform tests specified below in presence of authorities having jurisdiction:
 - a. Roughing-in Inspection: Arrange for inspection of piping before concealing or closing-in after roughing-in and before setting fixtures.
 - b. Final Inspection: Arrange final inspection for authorities having jurisdiction to observe tests specified below and to ensure compliance with requirements.
 3. Reinspection: If authorities having jurisdiction find that piping will not pass test or inspection, make required corrections and arrange for reinspection.
 4. Reports: Prepare inspection reports and have them signed by authorities having jurisdiction.
- B. Test domestic water piping as follows:

1. Fill domestic water piping. Check components to determine that they are not air bound and that piping is full of water.
2. Test for leaks and defects in new piping and parts of existing piping that have been altered, extended, or repaired. If testing is performed in segments, submit separate report for each test, complete with diagram of portion of piping tested.
3. Leave new, altered, extended, or replaced domestic water piping uncovered and unconcealed until it has been tested and approved. Expose work that was covered or concealed before it was tested.
4. Cap and subject piping to static water pressure of 50 psig (345 kPa) above operating pressure, without exceeding pressure rating of piping system materials. Isolate test source and allow to stand for four hours. Leaks and loss in test pressure constitute defects that must be repaired.
5. Repair leaks and defects with new materials and retest piping or portion thereof until satisfactory results are obtained.
6. Prepare reports for tests and required corrective action.

3.08 CLEANING

- A. Clean and disinfect potable domestic water piping using purging and disinfecting procedures prescribed by authorities having jurisdiction.
- B. Submit water samples in sterile bottles to authorities having jurisdiction. Repeat procedures if biological examination shows contamination.
- C. Prepare and submit reports of purging and disinfecting activities.

END OF SECTION

SECTION 15145 - DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. This Section includes the following domestic water piping specialties:
 - 1. Temperature-actuated water mixing valves.
 - 2. Hose bibbs.
- B. Related Sections include the following:
 - 1. Division 15 Section "Meters and Gages" for thermometers, pressure gages, and flow meters in domestic water piping.
 - 2. Division 15 Section "Domestic Water Piping" for water meters.

1.03 PERFORMANCE REQUIREMENTS

- A. Minimum Working Pressure for Domestic Water Piping Specialties: 125 psig, unless otherwise indicated.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Diagram power, signal, and control wiring.
- C. Field quality-control test reports.
- D. Operation and Maintenance Data: For domestic water piping specialties to include in emergency, operation, and maintenance manuals.

1.05 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. NSF Compliance:

1. Comply with NSF 14, "Plastics Piping Components and Related Materials," for plastic domestic water piping components.
2. Comply with NSF 61, "Drinking Water System Components - Health Effects; Sections 1 through 9."

PART 2 - PRODUCTS

2.01 TEMPERATURE-ACTUATED WATER MIXING VALVES

A. Water-Temperature Limiting Devices:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Armstrong International, Inc.
 - b. Cash Acme.
 - c. Conbraco Industries, Inc.
 - d. Honeywell Water Controls.
 - e. Legend Valve.
 - f. Leonard Valve Company.
 - g. Powers; a Watts Industries Co.
 - h. Symmons Industries, Inc.
 - i. Taco, Inc.
 - j. Watts Industries, Inc.; Water Products Div.
 - k. Zurn Plumbing Products Group; Wilkins Div.
2. Standard: ASSE 1017.
3. Pressure Rating: 125 psig (860 kPa).
4. Type: Thermostatically controlled water mixing valve.
5. Material: Bronze body with corrosion-resistant interior components.
6. Connections: Threaded inlets and outlet.
7. Accessories: Check stops on hot- and cold-water supplies, and adjustable, temperature-control handle.
8. Tempered-Water Setting: 120deg F
9. Tempered-Water Design Flow Rate: 3gpm per unit served.
10. Valve Finish: Rough bronze.

2.02 HOSE BIBBS

A. Hose Bibbs:

1. Standard: ASME A112.18.1 for sediment faucets.
2. Body Material: Bronze.
3. Seat: Bronze, replaceable.
4. Supply Connections: NPS 3/4 threaded or solder-joint inlet.
5. Outlet Connection: Garden-hose thread complying with ASME B1.20.7.
6. Pressure Rating: 125 psig (860 kPa).

7. Finish for Service Areas: Rough bronze.
8. Operation for Service Areas: Wheel handle.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Refer to Division 15 Section "Common Work Results for Plumbing" for piping joining materials, joint construction, and basic installation requirements.
- B. Install temperature-actuated water mixing valves with check stops or shutoff valves on inlets and with shutoff valve on outlet.
 1. Install thermometers and water regulators if specified.
 2. Install cabinet-type units recessed in or surface mounted on wall as specified.

3.02 CONNECTIONS

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping and specialties.

3.03 LABELING AND IDENTIFYING

- A. Equipment Nameplates and Signs: Install engraved plastic-laminate equipment nameplate or sign on or near each of the following:
 1. Temperature Actuated water mixing valves.
- B. Distinguish among multiple units, inform operator of operational requirements, indicate safety and emergency precautions, and warn of hazards and improper operations, in addition to identifying unit. Nameplates and signs are specified in Division 15 Section "Mechanical Identification."

3.04 FIELD QUALITY CONTROL

- A. Perform the following tests and prepare test reports:
 1. Test each Temperature Actuated water mixing valve according to authorities having jurisdiction and the device's reference standard.
- B. Remove and replace malfunctioning domestic water piping specialties and retest as specified above.

3.05 ADJUSTING

- A. Set field-adjustable temperature set points of temperature-actuated water mixing valves.

END OF SECTION

SECTION 15486 - FUEL-FIRED WATER HEATERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section Includes:
 - 1. Gas-fired, tankless, domestic-water heaters.

1.03 SUBMITTALS

- A. Product Data: For each type and size of domestic-water heater indicated. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings:
 - 1. Wiring Diagrams: For power, signal, and control wiring.
- C. Product Certificates: For each type of gas-fired, tankless, domestic-water heater, from manufacturer.
- D. Domestic-Water Heater Labeling: Certified and labeled by testing agency acceptable to authorities having jurisdiction.
- E. Source quality-control reports.
- F. Field quality-control reports.
- G. Operation and Maintenance Data: For fuel-fired, domestic-water heaters to include in emergency, operation, and maintenance manuals.
- H. Warranty: Sample of special warranty.

1.04 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

- B. ASHRAE/IESNA 90.1 Compliance: Fabricate and label fuel-fired, domestic-water heaters to comply with ASHRAE/IESNA 90.1.
- C. NSF Compliance: Fabricate and label equipment components that will be in contact with potable water to comply with NSF 61, "Drinking Water System Components - Health Effects."

1.05 COORDINATION

- A. Coordinate sizes and locations of concrete bases with actual equipment provided.

1.06 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of fuel-fired, domestic-water heaters that fail in materials or workmanship within specified warranty period.

- 1. Failures include, but are not limited to, the following:
 - a. Structural failures including storage tank and supports.
 - b. Faulty operation of controls.
 - c. Deterioration of metals, metal finishes, and other materials beyond normal use.
- 2. Warranty Periods: From date of Substantial Completion.
 - a. Gas-Fired, Tankless, Domestic-Water Heaters:
 - 1) Heat Exchanger: Five (5) years.
 - 2) Controls and Other Components: Five (5) years.

PART 2 - PRODUCTS

2.01 GAS-FIRED, TANKLESS, DOMESTIC-WATER HEATERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Rinnai Corporation or comparable product by one of the following:
 - 1. Baxi.
 - 2. Bosch Water Heating.
 - 3. Bradford White Corporation.
 - 4. NORITZ America Corp.
 - 5. Paloma Industries, Inc.
 - 6. Rheem Manufacturing Company; Rheem Water Heating.
 - 7. Smith, A. O. Water Products Co.; a division of A. O. Smith Corporation.
 - 8. State Industries.
 - 9. Takagi.
 - 10. WaiWela.

- B. Standard: ANSI Z21.10.3/CSA 4.3 for gas-fired, instantaneous, domestic-water heaters for indoor application.
- C. Construction: Copper piping or tubing complying with NSF 61 barrier materials for potable water, without storage capacity.
 - 1. Tappings: ASME B1.20.1 pipe thread.
 - 2. Pressure Rating: 150 psig (1035 kPa).
 - 3. Heat Exchanger: Copper tubing.
 - 4. Insulation: Comply with ASHRAE 90.2.
 - 5. Jacket: Metal, with enameled finish, or plastic.
 - 6. Burner: For use with tankless, domestic-water heaters and LP-gas fuel.
 - 7. Automatic Ignition: Manufacturer's proprietary system for automatic, gas ignition.
 - 8. Temperature Control: Adjustable thermostat with integral self-diagnosing system.
- D. Support: Bracket for wall mounting.
- E. Capacity and Characteristics:
 - 1. Flow Rate: 0.6GPM–5.0GPM at 35 deg F temperature rise.
 - 2. Temperature Setting: 120 deg F (52 deg C) factory default.
 - 3. Fuel Gas Input: 15,000 – 150,000 Btu/h .
 - 4. Gas Pressure Regulator:
 - a. Inlet Pressure: 8 – 13.5 inches water column.
 - b. Gas Pressure Required at Burner: high fire 3.2 inches, low fire 0.92 inches water column.
 - 5. Electrical Characteristics:
 - a. Volts: 120 Insert value.
 - b. Phase: Single.
 - c. Hertz: 60.

2.02 DOMESTIC-WATER HEATER ACCESSORIES

- A. Gas Shutoff Valves: ANSI Z21.15/CSA 9.1-M, manually operated. Furnish for installation in piping.
- B. Gas Pressure Regulators: ANSI Z21.18/CSA 6.3, appliance type. Include pressure rating as required to match gas supply.
- C. Automatic Gas Valves: ANSI Z21.21/CSA 6.5, appliance, electrically operated, on-off automatic valve.
- D. Combination Temperature-and-Pressure Relief Valves: Include relieving capacity at least as great as heat input, and include pressure setting less than domestic-water heater working-pressure rating.
 - 1. Gas-Fired, Domestic-Water Heaters: ANSI Z21.22/CSA 4.4-M.

- E. Vacuum Relief Valves: ANSI Z21.22/CSA 4.4-M.
- F. Domestic-Water Heater Mounting Brackets: Manufacturer's factory-fabricated steel bracket for wall mounting, capable of supporting domestic-water heater and water.
- G. Vent System: Provide manufacturer's concentric vent system; seamless Plastic vent and impact resistant outer vent made from non-flammable material conforming to UL94-V0; seamless Aluminum inner vent with seal rings rated to 400 deg F; All-Weather horizontal termination Kit; Rinnai UBBINK Vent System or equal.

2.03 SOURCE QUALITY CONTROL

- A. Factory Tests: Test and inspect assembled domestic-water heaters specified to be ASME-code construction, according to ASME Boiler and Pressure Vessel Code.
- B. Hydrostatically test domestic-water heaters to minimum of one and one-half times pressure rating before shipment.
- C. Domestic-water heaters will be considered defective if they do not pass tests and inspections. Comply with requirements in Division 1 Section "Quality Requirements" for retesting and reinspecting requirements and Division 1 Section "Execution Requirements" for requirements for correcting the Work.
- D. Prepare test and inspection reports.

PART 3 - EXECUTION

3.01 DOMESTIC-WATER HEATER INSTALLATION

- A. Tankless, Domestic-Water Heater Mounting: Install tankless, domestic-water heaters at least 18 inches (457 mm) above floor on wall bracket.
 - 1. Maintain manufacturer's recommended clearances.
 - 2. Arrange units so controls and devices that require servicing are accessible.
 - 3. Place and secure anchorage devices. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
 - 4. Install anchor bolts to elevations required for proper attachment to supported equipment.
 - 5. Anchor domestic-water heaters to substrate.
- B. Install domestic-water heaters level and plumb, according to layout drawings, original design, and referenced standards. Maintain manufacturer's recommended clearances. Arrange units so controls and devices needing service are accessible.
 - 1. Install shutoff valves on domestic-water-supply piping to domestic-water heaters and on domestic-hot-water outlet piping. Comply with requirements for shutoff valves specified in Division 15 Section "Valves".
- C. Install gas-fired, domestic-water heaters according to NFPA 54.